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MANUSCRIPT REPAIR IN EUROPEAN ARCHIVES¹

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FRANCE, BELGIUM, AND THE NETHERLANDS

ARCHIVES NATIONALES (Paris)

CREATED in 1789-1790 by the Constituent Assembly, the national archives of France were in the beginning only the documents relative to the operations of this assembly; but the events of the French Revolution and the centralizing spirit of the National Convention transformed the archives of the assembly into a general repository of all papers from the administrations of the old régime. Everything fell into the hands of the new government and was centralized not only in Paris but in the chief cities of the departments: archives of the seignorial justices; titles to ecclesiastical grants; records of the ancient provincial administrations, religious orders, judicial corps, lay corporations, and academies; papers of princes, emigrants, and condemned prisoners. First installed in the Louvre, the national archives were in 1808 transferred to the old residence of the princes of Soubise, acquired for the purpose by Napoleon I. To them were added, roughly, all the papers of the establishments of the old régime in Paris, forming the ancient section of the archives (the judicial papers, provisionally deposited in the Palace of Justice, were reunited in 1848 with the historical and administrative papers in the Soubise mansion). The modern section of the archives comprises the papers of the revolutionary assemblies and those transferred during the nineteenth century by various ministries (with the exception of some, such as the Ministry of War, which retained their own records). These transfers were continued in accordance with a decree of Janu-

¹ This is the second and concluding installment summarizing the results of Mr. Smith's investigations into methods of manuscript repair in some of the principal European archives.

ary 12, 1898, which provided for the periodical conveyance of *dossiers*, registers, and individual items no longer needed in the current business of the ministries. The national archives also receives records from certain private muniment rooms.²

The *atelier de réparation* in the Archives nationales is a smallish, dark, cluttered room, up a flight of narrow stairs. The light is rather feeble, and presses and bookbinding equipment crowd the room. Another room, below, is devoted to binding repair. Three or four repairers, headed by M. Dubos, comprise the staff. The principal characteristics of the repairing technique followed here may be briefly listed:

1. *Parchment repair*

For simple joins of two torn pieces, Japanese paper (very thin and yellowish) is pasted on both sides, pressed, and later almost entirely removed by means of sandpaper.

No moisture is applied during parchment repair. If the document requires previous flattening, it is pressed between moistened sheets of paper.

For supplying missing portions, pieces of old parchment (blank pages from manuscript volumes in the archives) are used, matching as closely as possible the color and texture of the document.

A thick, wheat flour paste, with alum added, is the adhesive.

2. *Paper repair*

Japanese paper is again used. It is considered less expensive and more transparent than silk gauze. Moreover, missing bits of writing are sometimes supplied in new ink, and it would be much more difficult to write over the gauze than over the Japanese paper.

3. *Binding repair*

The original style of binding is retained where possible, and old leather panels are replaced when they contain stamped patterns or anything of interest.

The stacks are of predominantly wooden construction. Long corridors have been converted into series of alcoves of tall wooden shelves. Outside windows are the only means of ventilation. Dust is one of the greatest problems encountered. There are many volumes,

² *Guide international des archives* (Paris: Institut International de Coopération Intellectuelle, 1934), pp. 112-113.

but most of the individual documents are kept in *dossiers* in uniform heavy strawboard boxes, with hinged tops and let-down flaps in front. Bundles are usually secured by a strip of webbing fastened around them, with a metal clip attached.

BIBLIOTHÈQUE NATIONALE (Paris)

A letter of introduction to M. Leroy, secretary-general of the Bibliothèque nationale, paved the way for a very brief visit to that vast institution. A short time was spent in the bindery with Madame Friedrich, the manuscript repairer. Japanese paper and a kind of parchment paper are her chief materials. Missing portions are supplied with the parchment paper, and the joins are covered with Japanese paper, pasted down with thin flour paste. Gradually increasing pressure is an essential step in repair, as usual.

Remodeling and modernization, including particularly the installation of proper lighting and ventilation, are proceeding steadily in the Bibliothèque nationale. There is still no electric light in the stacks, so that no book requests can be filled after a certain hour, which in winter is quite early in the afternoon. Additional space for books has been provided by the transfer of all the provincial newspapers to a repository (formerly the stables of Marie Antoinette) at Versailles. Working quarters have been rearranged and improved, notably the reserve reading room and the cataloguing department. A *salle de bibliographie* has been created by uniting in one room the library catalogues and principal works of reference. The manuscript reading room was fleetingly glimpsed, but the manuscript stacks were found to be closed to visitors by virtue of an inflexible rule.

ARCHIVES GÉNÉRALES DU ROYAUME (Brussels)

The Archives générales du Royaume in Brussels is one of nine repositories established in the chief cities of the provinces, each of which preserves the records of its particular province since 1830. The Brussels repository keeps, however, in addition to the provincial records of Brabant, the archives derived from the old central government administrations, excepting the ministries of foreign affairs and national defense, which maintain their own archival service. There is a series of printed and typed indexes of the national archives, in volume form, available to readers. The chief archivist is M. D. D. Brouwers, formerly conservator of the archives of Namur.

The repair laboratory, in the charge of M. Bolsée, is situated in a little annex to the main archives building, which must be approached from the outside. It contains two rather small rooms, one used by the printer and photographer, the other by the two repairers. The workbench, topped with a black marble slab, faces the window.

The chief method of repair in the Brussels archives has for about the last nine years consisted of the application of a celluloid solution called *zapon*, composed as follows:

Celluloid, fine shavings	3 gr.
Camphor	1 gr.
Acetone (or acetic ester)	20 gr.
Amyl acetate	76 gr.
<i>or</i>	
Nitro-cotton	3 gr.
Camphor	1.5 gr.
Amyl acetate	75.5 gr.
Acetic ester (or acetone)	20 gr.

The *zapon*, in liquid form, is brushed on one side of the manuscript, which is then hung up to dry. This takes about two hours, depending on the temperature of the room. When dry the *zapon* becomes a thin yet strongly hardened film, serving as a protective covering for the manuscript and even filling in small holes and tears. When a manuscript is thus "zaponized," no actual repairing (in the sense of filling in torn or missing portions) or resizing is deemed necessary, as it can be handled with perfect safety even if its edges are ragged. The occasional concession, however, of using a small piece of transparent silk gauze, may be made when there is a serious tear in the manuscript. Not only paper but also parchment documents have been treated with *zapon*.

Although nine years have produced no discoloration or apparently harmful results in paper documents treated with *zapon*, not enough time has elapsed to justify a final verdict as to its chemical stability. Inflammability is another question to be seriously considered. Although experiments seem to indicate that the "zaponized" documents burn no more easily than ordinary paper, there is a definite danger of the vapor from the *zapon* catching fire, especially in rooms with any type of open fires. It has been suggested that this inflammability could be reduced by replacing a considerable quantity of the solvent with chloroform or carbon tetrachloride; but this would not only be more expensive but would necessarily involve special arrangements

for ventilation in the workroom. While there is no doubt that fragile paper documents treated with *zapon* are thereby strengthened and protected against further damage, it is also true that much the same strengthening and protection can be obtained by an application of ordinary animal size (from pieces of vellum or parchment boiled down in water), as at the Public Record Office in London. All early western papers were animal-sized at the time of manufacture. This size is not only cheaper, simpler to make, and less hazardous to use than the *zapon*, but also has the added recommendation that it restores to the paper the quality which it has lost. Parchment documents treated with *zapon* in the Brussels archives appeared crinkly and brittle to the touch, and in some cases the ink had spread.

In the Brussels archives it is the usual practice to use chemical means for bringing up faded or stained writing. This has been done not only in cases of manuscripts previously stained with gall but also with those which were faded because of any one of a number of factors. There are two separate and successive chemical baths indicated—the first (one part ammonium hydrosulphate to twenty parts of water) to bring up the writing and the second (0.4 gr. of tannin and 5 cc. of acetic acid to 100 cc. of water) to make the reaction permanent and at the same time to prevent any harmful effects of the first reagent. M. Bolsée made it clear that the second bath could sometimes be used alone, particularly in cases where the manuscript had been previously stained with gall.

The manuscripts which had been given these treatments were not very reassuring in appearance, having great, discolored blotches. The more recent method of bringing up faded writing by examination under ultra-violet light is not yet in favor with the authorities here, as they feel that anything made visible under the ultra-violet must necessarily be visible in the first place to the naked eye. They have not yet had the opportunity of testing the remarkable results which can be obtained with ultra-violet light, both for visual examination and for purposes of photography. Furthermore, they do not take into account that the use of ultra-violet light entails no risk whatever to the manuscript (something which certainly cannot be said of chemical reagents, no matter how carefully they may be applied).

The methods of repairing and molding seals in Brussels originally served as a model for the Public Record Office, so that the two procedures are virtually identical. In general, however, there are more added refinements in the English method of molding—such

as the use of waxed paper to protect the seal, and the making of an overhang in the plaster cast in order to facilitate its separation from the mold. Very little actual seal repair is undertaken in Brussels—only where absolutely necessary to prevent the seal from cracking up—and there is no filling out of missing portions with new beeswax. An impressive semi-circular room containing tiers of drawers has been built to house the collection of over 28,000 plaster molds of seals, in addition to some of the more precious documents with seals. There is a carefully compiled index, with descriptive information, of all the molds in the room. It was disturbing to note that some of the original wax seals were wrapped in cotton wool without any protective covering of waxed or greased paper to keep the inherent moisture of the wax from being withdrawn.

The outstanding features of the stacks observed were: (1) steel construction and very tall shelving, necessitating a stepladder to reach the upper shelves; (2) exceptionally wide aisles; (3) fire extinguishers at intervals; (4) ventilation only by opening windows occasionally; (5) long distance for attendants to walk to bring manuscripts to the reading room; and (6) unbound manuscripts left unbound (placed between pulp-boards and tied with tapes with flaps of cloth and paper at top and sides to keep out dust, or else in paper folders within large pasteboard boxes); but documents bound up at some time in the past left undisturbed.

The photographic department in the Brussels archives is quite active on behalf of both readers and correspondents. In many cases photographs of fragile manuscripts are shown to readers instead of the manuscripts themselves.

ALGEMEEN RIJKSARCHIEF (The Hague)

The Dutch system of provincial archives, with a central repository in the capital city, is very much on the order of that in Belgium. The Algemeen Rijksarchief, in The Hague, preserves in addition to the usual governmental records the archives of the Dutch West Indies up to and including the year 1846. There are a number of printed summary catalogues of the various classes of documents, which are being added to as finances and available time of staff permit. There is no card catalogue. A yearly résumé of progress in cataloguing was formerly added to the archivist's *Annual Report*, but this has now been discontinued except as an occasional separate publication. The chief archivist is Professor R. Fruin.

Here, as in many other archives visited, the bindery and repair-shop are combined, and the chief repairer, in service at the archives for twenty-five years, is a man who has a wide background of binding experience. The room in use has windows on two sides, with the workbenches facing them. A large cutting machine occupies the center of the room.

Japanese paper is the principal repairing material. The usual procedure for repairing a paper document which is in bad condition, with perhaps a portion missing, is to fill in the missing section with old paper (selected to match the document as closely as possible) and then to cover both sides of the document completely with a sheet of Japanese paper. A commercially prepared binder's paste, well diluted with water, is used as an adhesive. The document is finally subjected to pressure, light at first but increasingly heavy, until it is thoroughly dry. The same method is used for the repair of parchment documents, except that filling in (with old parchment if possible) is seldom done. Flattening is accomplished in the press, as with paper documents; but it is sometimes necessary when dealing with large charters to spread them on a large surface and tack them down at the edges to insure their drying straight. No resizing is done, as it is deemed unnecessary when the document has been covered on both sides with Japanese paper.

The cardinal objection to the use of Japanese paper as a covering for fragile manuscripts is that it is not completely transparent. Handwriting which is in a heavy or even ordinarily intense ink is usually quite readable through the Japanese paper, but faded writing is apt to be almost completely obscured. Another question which arises, as with all materials employed in manuscript repair, is this: Will the Japanese paper change color in the course of time? It is generally conceded to be absolutely stable, and its long and meritorious record of service in the Dutch archives (since 1858) would seem to indicate that it is unobjectionable on this score. In more than one case during this tour of archives in Europe, the writer was told in all seriousness that a slight yellowish tinge in the Japanese paper was all to the good, as it disguised the newness of the repair. Here there is a definite and rather deplorable departure from the accepted view that manuscript repairs should never be disguised or made so intentionally fine that they are not immediately apparent to the naked eye.

What about the practice of using blank sheets from old documents as repairing material? No doubt in many repositories the supply is practically inexhaustible, but the mere fact of availability is not the only thing to be considered. More important—in fact, often extremely vital to the scholar—is the evidence furnished by blank leaves as to the original physical condition of the document. In other words, if a document is worth preserving for posterity, it should be preserved in its original state, unchanged (as far as possible) in physical appearance or content. Only thus can it be of the fullest, unquestioned value as historical or literary evidence. Any sign of tampering may lead to confusion or even doubt of its authenticity.

There is no seal repair or molding attempted in the Algemeen Rijksarchief, except the occasional gluing together of broken seals.

The *magasijn* (stack) was built about 1900 and consists of six floors, of all-steel construction, with grill flooring and stairs. The shelving is of slate. The ironwork, painted white, is unusually clean, in the Dutch tradition. Handlifts operated by ropes are found at intervals for transferring documents from one floor to another.

The steel shutters on the windows, electrically operated, can be closed all over the entire building in two minutes. Ventilation is secured only by occasional opening of the windows. Heating pipes along the lower floor keep the winter temperature up to about 58° F. in the stacks; in summer no artificial adjustment is necessary.

The prevailing types of container for the storage of documents are portfolios (two boards tied together, as at Brussels) and boxes. The portfolios in general have no dust flaps. Loose documents are not bound. Documents bearing seals are placed in separate envelopes, then arranged upright in boxes with let-down flaps on one side. Maps are kept flat if possible and laid in heavy portfolios in drawers.

Records of documents taken from the stack for use by readers take the form of entries in a charge-book. No slips are placed on the shelves to show where documents have been removed, except in portfolios from which a single item is taken. Documents reserved for readers are not returned to the stacks nightly but are kept in the reading room while in use.

At one side of one floor of the stack is a row of "cells" with separate doors, where items of particular value are kept, such as:

1. The original Treaty of Westphalia, 1648, by which the Netherlands gained their independence from Spain—in French and Spanish; two separate volumes (original red velvet); signed by Philip of

Spain, with his seal in gold; kept in a glass case within a steel safe, the top of which when lifted to a vertical position and pushed downward causes the glass case to come up into view.

2. Several large charters on parchment bearing the seals of all the principal cities of Holland, in order of date of founding (from left to right), with accompanying signatures of burgomasters. Greenish wax predominant in the seals.

3. Some very early maps of Holland and one or two of New Netherland. The very early charters on parchment, going back in some instances to the twelfth century, are stored in wooden cabinets on deep thin wooden shelves, which may be pulled out. The documents are kept flat and in position by tapes.

A photographic department supplies reproductions of documentary material upon request and occasionally undertakes ultra-violet photography. An ultra-violet apparatus of the Hanau quartz-lamp type is available to readers in a dark chamber provided in the photographic department. This particular lamp is a therapeutical model, nickel-plated, and can be lowered or raised by a cable. Readers themselves may bring manuscripts up from the reading room to the ultra-violet chamber. A consultation period of longer than fifteen minutes is inadvisable, as there is no air in the chamber when the door is closed.³

GERMANY AND AUSTRIA

PREUSSISCHES GEHEIMES STAATSARCHIV (Berlin-Dahlem)

The Preussisches geheimes Staatsarchiv in Berlin-Dahlem contains the central archives of Brandenburg and Prussia, dating from

³ For additional material on the French archives see: Léon Dorez, "L'incendie de la Bibliothèque nationale de Turin," *Revue des Bibliothèques*, XIV (1904), 77-99. Franz Ehrle, "Sur la conservation et la restauration des anciens manuscrits," *Revue des Bibliothèques*, VIII (1898), 155-172, translated from the Italian by Léon Dorez. The same article appears in *Bibliothèque de l'École des chartes*, LIX (1898), 479-495. F. C. Lonchamp, *Therapeutica graphica, ou Part de collectionner, de conserver et de restaurer les dessins, les manuscrits, les estampes et les livres* (Paris and Lausanne: Librairie des Bibliophiles, 1930). Méray, "Moyens de restaurer les vieux livres," *Annuaire du Bibliophile* (Paris, 1862). "Procès verbal de la Conférence internationale pour la conservation et la restauration des anciens manuscrits tenue à Saint-Gall," *Revue des Bibliothèques*, VIII (1898), 415-425.

For Belgium, see Elise Samuelson, "De la restauration d'anciens manuscrits par le kitt," *Actes du Congrès international des Archivistes et Bibliothécaires de Bruxelles* (1910) (Brussels: Siège de la Commission permanente des Congrès, 1912), pp. 205-208; and for the Netherlands, Maarten Schoengen: "Over het Zapon," and "Verlag van Dr. Sello's lezing over Zapon op den Dritten deutschen Archivtag, te Dusseldorf," *Nederlandsch Archievenblad*, XI (1902-1903), 32-45, 143-156.

the end of the sixteenth century. These consist of the records of the central Prussian authorities (Privy Council, General Direction, ministries of the modern era, other central administrations, high courts of justice, etc.), the archives of the Prussian army (up to 1866), the records of the Ministry of Foreign Affairs (to 1867), and of the "Kingdom of Westphalia" (1807-1813), in addition to a collection of maps, etc. There is a printed summary catalogue of the archives, in two volumes. Many early manuscript and printed lists of departmental records (called *Repertoria*) are available to readers, and a partial card index to the *Repertoria*, covering names and subjects, is helpful in a number of instances. Dr. Heinrich Otto Meisner is chief archivist.

Except in the case of documents of extreme fragility (which are reinforced where necessary by a double thickness of Japanese paper and covered on one side with transparent silk gauze), the prevailing method of repair in the Prussian archives involves the application of parchment paper (a transparent paper, German-made, similar to parchment). This material is applied with wheat flour paste to both sides of the document, thus covering it completely. The advantages urged for parchment paper by the staff of the Prussian archives, as compared with silk gauze or Japanese paper, are several:

1. It is cheaper.
2. It is easier to apply. More documents can be repaired in a shorter time (an important point in a large archival repository). But this simplicity of application is offset by a disagreeable crinkled condition apparent in the repaired document, which persists in spite of pressure and repeated smoothing subsequent to application.
3. It is flexible. In this respect it is supposedly much superior to *zapon*, which is brittle and may cause the paper to crack when bent sharply. But, in common with *zapon*, the parchment paper gives to the document an unnatural, slick appearance and feel.
4. It is not likely to change in color. At least, after about ten years' use in the archives no change has been evident. But the color of the parchment paper is yellowish to begin with, and consequently a distinctly yellowish tinge is imparted to documents covered with it.
5. It is free from acidity, which may be injurious to the paper. This was not true of the earlier parchment paper, but now a special quality is manufactured for the Staatsarchiv by the firm of Knoeckel, Schmidt, & Co., in Lambrecht (Rheinpfalz), guaranteed to be acid-free. Sev-

eral thicknesses are available, but a medium weight—not the thinnest—is used by the Staatsarchiv. It costs about 680 Rm. per 1000 kilograms.

A similar procedure is followed in the repair of parchment documents; no new parchment is employed. Seal repair is done on a small scale.

The Prussian archives issued under the date of October 6, 1936, an official communication addressed to all German archives, entitled *Richtlinien für die Ausbesserung von Archivalien* (Guides for the Repair of Archives). This mimeographed circular emphasizes the necessity of proper conservation and restoration of records, both official and unofficial, including such important sources of local history as parish registers. An offer is made to repair local archives in the technical repair-shop of the Geheimes Staatsarchiv, or, in case such work has been undertaken by the local staff or in a commercial workshop, it is suggested that the repaired manuscripts be sent to Berlin-Dahlem for examination. A brief outline of recommended repairing methods is set forth, and it is pointed out that adaptations of procedure can be made with regard to different types of archives. Silk gauze, Japanese paper, parchment paper, old paper, and new wood-free and weakly-sized paper are all listed as possible repairing materials, but the parchment paper is suggested to be most suitable in a large number of cases. It is explained that the parchment paper is manufactured only under special conditions and in large quantities, so that it is best to order through the Geheimes Staatsarchiv, which undertakes to deliver smaller quantities cost free to local archives or at cost price to private bookbinders connected with the archives.

The stacks, in a fireproof wing of the Prussian archives building entirely separate from the offices, are quite new but already full almost to capacity, and an addition is therefore contemplated. The construction is of steel throughout, but the shelves are wooden. The linoleum-covered floors are kept spotlessly clean.

In general, documents as transferred from the state departments are already bound in some form, or perhaps only sewed together. It is customary to place two or three of these volumes together and wrap them in a dustproof paper folder, which is tied and labeled. The records of each department are of course kept separate, generally in chronological order. Very early documents with seals are kept in paper envelopes in boxes. The earliest records in the office date

from about A.D. 1200 and mostly relate to lands, etc., in the mark of Brandenburg. There is a collection of loose seals—removed, at some unknown time in the past, from the documents to which they were originally affixed—which are numbered, classified, and kept in drawers. Certain rooms in the stack are devoted solely to state treaties, which are usually quite spectacular in appearance, with silver skip-pets and velvet covers with fancy tassels.

The reading room in the archives is modern and well lighted, with accommodation for about a hundred readers. Superintendents sit at raised desks at each end of the room, behind which are shelves where documents are retained overnight. A large proportion of the readers are bent on genealogical research.

DR. IBSCHER

At the recommendation of Dr. Rohr, of the Prussian archives, a visit was paid to Dr. Ibscher, widely known as a restorer of ancient manuscripts, whose headquarters at the time were in the Egyptian Department of the Neues Museum in Berlin. One of Dr. Ibscher's most expert accomplishments is the repair of ancient manuscripts on papyrus. He has even succeeded in making papyrus according to the ancient method, from the papyrus plant. There were numerous papyri on hand which he had already treated, together with a very badly damaged and matted specimen which awaited attention. The latter had been water-soaked at one time and seemed a solid, inseparable mass, with the writing worse than illegible. By dint of great care and unending patience, however, it is possible to lift the papyrus sheets one by one with small steel pincers, fit together fragmentary pieces, and mount them individually between glass. No attempt is made to restore or reinforce the damaged papyrus; it is simply protected against further damage.

Dr. Ibscher's methods of paper and parchment repair (with Japanese paper and silk gauze) are almost identical with those in use at the Prussian archives. One minor deviation in technique, however, is worthy of note. To flatten and dry a repaired document on paper, Dr. Ibscher does not resort to pressing; he simply pastes down to the board or repairing surface the surplus edges of the Japanese paper and silk gauze, which he intentionally has allowed to extend a little beyond each edge of the document, and leaves it to dry out. A paste-board is lightly laid on the document to protect it from dust, but no pressure is exerted. Documents on parchment, on the other hand,

are flattened and dried in a press. They are usually repaired in much the same manner, although new parchment may be used for reinforcement if the items are particularly valuable. The paste used in this operation is Hofmann's *reis-sterg* (commercially prepared), which has, obviously, a rice basis. Dr. Ibscher mixes it with water (first cold, then boiling), stirs constantly till it is of a creamy consistency, and strains it through a cloth to get rid of lumps. He makes it freshly every two or three days to insure purity and cleanliness and freedom from bacteria. No resizing is done, as the paste itself is supposed to contribute sufficient strengthening qualities.

HERR RICHTER

Herr Richter, of the Department of Engraving of the Neues Museum, specializes in cleaning, repairing, and mounting etchings, drawings, engravings, etc., and also in the repair of old bindings. For the removal of the brown spots which often occur on engravings, Herr Richter recommends the following treatment:

Immerse the engravings consecutively, for the periods of time indicated, in four baths as follows (large shallow porcelain trays will be found most suitable)—

- | | |
|---|----------------|
| 1. Pure water | 2 hours |
| 2. <i>Chlor</i> (A solution of 400 gr. of chloride of lime in 4 liters of pure water) | 2 or 3 minutes |
| 3. <i>Anti-chlor</i> (A solution of 200 gr. of hyposulphite of soda in 4 liters of water which neutralizes the effect of the <i>chlor</i> and serves as a fixing agent) | 3 minutes |
| 4. Running water | 6 hours |

Dry between frequently changed blotters or other absorbent sheets.

[Note: The *chlor* and *anti-chlor* are kept in yellow glass bottles. The *chlor* is always strained through a cloth before use.]

REICHSARCHIV (Potsdam)

The Reichsarchiv, or national archives of Germany, was founded in 1919. The archives building is a former military school, extensively remodeled and enlarged, on a hill in Potsdam called the *Brauhausberg*. The institution is divided into two principal departments: archives and historiography. The archives include the records which are periodically transferred from the departments of the Reich. They are subdivided into political, economic, juridical, and military documents, bequests and collections relating to contemporary history, maps, and photographs. The historiography section is at present

working on the subject of the World War, for which there are masses of historical material in the archives.

The documents in the Reichsarchiv are practically all less than a century old, dating back no earlier than 1870, and originating mostly during and after the period of the World War. This fact entails a somewhat different approach to the problem of repair and preservation. The primary object is not so much to restore and strengthen as to protect from fading and any other damage to which the manuscripts might eventually be exposed. Cases of water-soaking, insect ravages, etc., are comparatively infrequent among documents of recent date, although they do of course occur, particularly if methods of storage are lax. It has therefore been thought wise to cover these late documents completely with some transparent, impermeable substance, or to varnish those portions which are most apt to suffer from exposure to light or moisture.

The covering material formerly in use at the Reichsarchiv was parchment paper (the same quality as that used at the Prussian archives in Berlin-Dahlem), but this has been largely replaced by cellophane, which has the advantage of being more transparent and absolutely colorless. The cellophane is obtained from Kalle and Company, *Aktiengesellschaft*, Wiesbaden-Biebrich, Germany. A descriptive booklet issued by the manufacturers lists the superlative qualities of the cellophane, among which the following are of especial interest to the archive repairer:

Cellophan is a transparent membrane made from pure cellulose. . . . It does not decay, ferment, get moldy, or permit the passage of bacteria. . . . It is harmless and perfectly free from any hygienic objections. . . . It is dust-proof and air-proof. . . . It is neither explosive nor inflammable (it burns no faster than a chip of wood) and it is stable in all climates and under all local conditions.

The cellophane is applied to the manuscripts with a special *leim*, or size (not paste). The documents when covered are flattened by rolling under a cylinder, but even after this treatment a disagreeable crinkled appearance may be noticed. Documents covered with cellophane can be submerged in water or exposed to the sun indefinitely without any damage.

A varnish preparation derived from copal, called *kopallack*, is the nearest approach to *zapon* in the Reichsarchiv. It is sprayed on the manuscripts, forming a protective (although yellowish) coating and preventing fading or running of the ink. It has been found

particularly useful in preserving documents written in pencil (liable to rubbing and dimming) and maps marked with colored ink or paint (liable to run if wet). Certain tests have been carried out at the Reichsarchiv to prove the efficacy of *kopallack*; e.g., a pencil-written page, half treated with *kopallack* and the other half untreated, was exposed to the sun for several hours. At the end of this period of exposure the untreated portion had faded into practical illegibility while the *kopallack*-covered part was as fresh and unfaded as before. *Kopallack* is not suitable for use with wood pulp papers, such as newsprint, in which case the application of parchment paper or cellophane is indicated. The same objections which have been raised with regard to other varnish preparations, such as *zapon*, hold good also with regard to *kopallack*.

The modern steel stacks are light, airy, and clean, and in general style of construction are very similar to the Prussian archives in Berlin-Dahlem. Two sections of particular interest were those devoted to maps and photographs. The huge collection of thousands of maps—which mostly originated during the World War—are kept flat in drawers within steel cabinets. Many of them have been treated with *kopallack*. There are numerical labels on the drawers and a regular catalogue of the entire collection. The photographs, which are only lately coming into their own as an integral, valuable part of archival records, are arranged in wooden drawers, by subject. The photographic department utilizes the Leica camera almost exclusively.

HAUPTSTAATSARCHIV (Munich)

The Hauptstaatsarchiv, or principal archives of Bavaria, was formed in 1921 by the amalgamation of certain special archives, established in 1799 to deal with the records of foreign and internal affairs and the dynasty of Wittelsbach. There is a good collection of ecclesiastical and monastic records, which was assembled when the monasteries of Bavaria were secularized in the nineteenth century. The chief archivist is Dr. O. Riedner.

Repair work is carried on here only to a very limited extent, and there seem to be no prescribed methods of procedure. Seals are occasionally repaired and often molded in plaster and cast in metal.

The entire archives were at the time of this visit in a state of upheaval, as it was a period of cleaning and renovation. The reading room, for instance, was quite unrecognizable, with furniture and books piled helter-skelter and workmen whitewashing the arched

ceilings. The records themselves were in the process of being transferred from the old stacks (of wooden construction) to a new and modern steel section adjoining. The new stacks, completed only about a year, are to be shared with the Staatsbibliothek, which occupies the same building.

With regard to the type of storage containers used in the Hauptstaatsarchiv, there were noted not only the usual portfolios and volumes but also some old chests and even metal containers (no doubt intended originally as a measure of safety in case of fire). A geographical arrangement of the material seems most frequently followed, although in certain cases single items, in folders, are in alphabetical order.

HAUS-, HOF-, UND STAATSARCHIV (Vienna)

The tripartite name of these archives may be separated into its component parts and explained thus: Haus—the family papers of the Hapsburgs, Maria Theresa having founded the archives in 1749; Hof—court and legal records; and Staat—archives of government departments.

The Austrian archives dwindled considerably after the World War, when the new nations carved out of Austrian territory, such as Czechoslovakia, wished to build up their own record repositories. To do this, they requested that documentary material originally sent from their districts to be deposited at the central archives in Vienna, and also material relating to their districts, should be transferred to them. Vienna, on the other hand, wished to keep its archives intact. This difficult situation was at last solved by a compromise: Material sent in for deposit was to be returned, but documents of the central administrations relative to the various sections of the country were retained, although in some cases lists were furnished. Sometimes documents were turned over but lists and indexes were kept, which means that searchers must often come to Vienna in order to consult the essential key to material actually deposited elsewhere. Professor Ludwig Bittner is in charge of the Haus-, Hof-, und Staatsarchiv.

There has been no secularization of monasteries in Austria such as that which occurred in Bavaria, so that many monasteries still possess large and important collections of manuscripts. Only financial stringency has in some instances compelled these institutions to part with their treasures.

A compound of cellulose acetate called *cellon* is chiefly used in

repair. It is applied in liquid form with a brush (as *zapon*), forming when hardened a protective varnish. This substance, together with a special solvent, is manufactured by *Cellon-Werke* (Dr. Arthur Eichengrün), Berlin, Charlottenburg. It is very similar to *cellit*, used (in solution in ether) in some other German archives, which is manufactured by *I. G. Farbenindustrie, Aktiengesellschaft, Abteilung L.*, Frankfurt-am-Main. Dr. Heinrich Frederking, prominent German archivist and author of an article on archive preservation and repair in *Archivalische Zeitschrift* (Series 3, vol. VII, pp. 201-218), recommends both *cellon* and *cellit*.

The cost of *cellon* is 3.50 Rm. per kilogram. Three liters of the liquid are sufficient to repair 3,000 manuscript leaves. It has been in use in the Haus-, Hof-, und Staatsarchiv for about five or six years and according to report has proved much superior to *zapon*, which was formerly employed in repair work. The two substances are very much alike in appearance, although *cellon* seems to form a thinner layer on the surface of the manuscript. It is quite customary to supplement the *cellon* coating with strips of rather thick Japanese paper where there are ragged edges and weak joints or folds to be strengthened. The procedure is simply to apply the *cellon* (which in this case acts not only as a varnish but also as an adhesive), lay the strips of paper in place, and brush more *cellon* over them. *Cellon* may also be used as a protective varnish for wax seals.

The principal objections to *cellon*, based on observation of a few manuscripts treated with it, may be briefly stated. Apart from the questions of chemical stability, inflammability, and the dubious advisability of varnishing manuscripts with a substance essentially foreign to their original and basic composition, which persistently recurred in spite of apparently logical reassurances, the chief concern in this instance was the factor of physical appearance:

1. The *cellon* dries in streaks.
 2. The area where it has been applied is definitely more brownish than any untreated portions.
 3. There is a noticeable discoloration on the verso of leaves treated.
- The method of treatment does not provide for prior flattening of the manuscripts, an operation which appears to make the manuscripts easier to deal with and also improves their appearance after repair. It is claimed that *cellon* brings up faded writing, but this may be regarded with definite suspicion, as any possible intensification of the writing is offset by the brownish stain caused.

One repair problem which has not yet been satisfactorily solved is how to deal with leaden *bullae* (affixed to papal documents) which seem to be corroding and flaking off. This condition has been particularly noticed on certain documents which came from Salzburg.

There is no ultra-violet or photographic apparatus in the Haus-, Hof-, und Staatsarchiv.

There are eleven stories of steel stacks, divided into sections of two or three stories each by solid floors, the remainder being of steel grill. If all the floors were of steel grill there would be a greater danger in case of fire, as the draft would draw the flames from floor to floor. There are only stairs for inter-floor communication. Natural light is admitted.

The predominant form of storage container is the portfolio, as usual. Wooden boxes are also in evidence, likewise metal cabinets with wooden trays containing medieval documents in paper envelopes.

One end of one floor of the stacks is sectioned off as an exhibition room. Here the shelf space has been inclosed with glass, behind which the documents are displayed on inclined boards. The exhibit is open to the public from about 10 to 1 every day. Among the most interesting manuscripts on view were: the last letter of Maria Theresa; letters of Kaiser Wilhelm, Queen Victoria, Bismarck, Schubert, Haydn, and many personages famous in the history of Austria; documents on vellum, some beautifully illuminated and with curious and unusual seals, mostly in perfect condition—several gold seals and some in wooden skippets.

NATIONALBIBLIOTHEK, HANDSCHRIFTEN-SAMMLUNG (Vienna)

The Nationalbibliothek, until 1920 called the Hofbibliothek, is the largest library in Austria and one of the most important in Europe. Among its collections are 1,210,000 printed volumes, 9,000 incunabula, and 27,000 bound manuscripts (2,360 Oriental), with 100,000 papyri from the collection of Archduke Rainer. Since 1808, the library has enjoyed the privilege of receiving a copy of every book published in Austria. The chief of the Department of Manuscripts is Dr. Emil Wallner.

In its methods of repairing manuscripts the Nationalbibliothek resembles the Public Record Office more nearly than any other institution visited. To begin with, handmade paper, supplemented where necessary by transparent silk gauze of French manufacture, is used for the repair of manuscripts on paper. It is, however, artificially

toned by dipping in coffee, to approximate as nearly as possible the color of the manuscript; and this is a doubtful practice as it is in the nature of disguising the repair. The technique of application of the repairing paper is almost identical, except that at the Nationalbibliothek the edges of the repairing paper are cut with a knife instead of being torn to provide a less noticeable featheredge. Manuscripts are fully backed if there is no writing on the verso. No resizing is done. Pure silk gauze is used only when some portion of the writing is to be covered; in other cases a mixture of silk and cotton, called *etamine*, is preferred, as it is less expensive and easier to obtain. The paste is a mixture of wheat and rice flour, cooked before use. New parchment is used to reinforce, strengthen, and fill out manuscripts on parchment. Flattening is accomplished by light pressing between blotting papers. Very fragile documents are placed between glass. One example was a leaf of a manuscript on black vellum, written in gold; part of it had also been covered with silk gauze, as it was torn. The Nationalbibliothek has rejected *cellon* and other cellulose acetate compounds because of suspicion of qualities which might possibly be harmful for the manuscripts.

The policy advocated for the repair of bindings is exactly that recommended so strongly by Mr. Jenkinson at the Public Record Office: Restore damaged bindings as far as possible to their original condition, if there is sufficient evidence in the way of surviving pieces of leather, etc. Incorporate such surviving pieces in the new binding, or if this is not practicable, insert them inside the cover where they may be examined if desired. If there are old oak boards, use them if they are not too damaged; wormholes may be plugged up and missing or broken portions may be replaced by new pieces of oak if necessary. If there are fragmentary clasps, repair them; if only one survives, make another which will be closely similar but not an exact duplicate.* Retain the original sewing if intact; renew only when necessary, and always in the same holes as the original sewing. Remove fragments of parchments, etc., found in old bindings and keep where readily available for examination. If the original binding has completely disappeared or has been so disguised by a later one (also damaged) that it cannot be reconstructed, rebind the volume in a style contemporary with the date of the manuscript, utilizing only the best, most durable

* At some time during the eighteenth century almost all the brass clasps on the medieval volumes in the Nationalbibliothek were removed, and many of the medieval bindings were replaced by the typical, uninteresting, gilt bindings of the period.

materials. Make a note on the flyleaf or in some other convenient position as to exactly what has been done in the present rebinding operation, so that in future there will be no question as to which portions of the binding are actually original.

There are about 100,000 loose documents in the library, and they are kept in heavy paper folders filed in wooden boxes. They are fully catalogued on cards.

There is an ultra-violet lamp in the library, but it is a very old model, and it is hoped that a new one may be purchased in the near future.⁵

ITALY

ARCHIVIO DI STATO (Venice)

The Venetian archives, renowned for the inexhaustible wealth of material which they contain, are housed in the Franciscan monastery of the Frari in Venice. They consist of the records—diplomatic, judicial, commercial, notarial, etc.—of the Venetian Republic, whose interests were at one time world-wide. These records were gathered together into one place by the Austrian government, from the various buildings where they had been stored, and arranged in some sort

⁵ For further material on the subjects of this section see: Baur, "Bemerkungen zur Konservierung von Archivalien," *Archivalische Zeitschrift*, Neue Folge, XII (1903), 156-170. Hans Beschorner, "Noch Einiges zum Archivalienschutz," with an appendix, "Zur Technik der Archivalienkonservierung," by Walter Bauer, *Archivalische Zeitschrift*, 3rd series, VII (1931), 219-226. Franz Ehrle: "Die internationale Konferenz in St. Gallen am 30. September und 1. Oktober 1898 zur Beratung über die Erhaltung und Ausbesserung alter Handschriften," *Zentralblatt für Bibliothekswesen*, XVI (1899), 27-51; "In sachen der internationalen Konferenz von St. Gallen (1898)," *Zentralblatt für Bibliothekswesen*, XXVI (1909), 245-263; "Über die Erhaltung und Ausbesserung alter Handschriften," *Zentralblatt für Bibliothekswesen*, XV (1898), 17-33. Heinrich Frederking: "Archivalienkonservierung," *Archivalische Zeitschrift*, 3rd series, VII (1931), 201-218; "Zapon oder Cellit," *Protokolle der deutschen Archivtage seit 1902* (1910). Raphael Kögel, "Gelatine oder Cellit zur Konservierung von Handschriften," *Studien und Mitteilungen zur Geschichte des Benediktinerordens*, XXXV (1914), 353-358. E. L., "Ueber die Anwendung von Zapon bei Archivalien," *Zentralblatt für Bibliothekswesen*, XX (1903), 67-68. Adolf Martens, "Festigung morscher Papiere oder Pergamente durch Behandlung mit cellitlösung," *Kgl. Materialprüfungsamt Mitteilungen* (Berlin, 1911), vol. XXIX. Friedrich Philippi, *Einführung in die Urkundenlehre des deutschen Mittelalters* (Bonn and Leipzig, 1920), p. 221 *et seq.* Otto Posse, *Handschriften-konservierung . . .* (Dresden, 1899). E. Schill, *Anleitung zur Erhaltung und Ausbesserung von Handschriften durch Zapon-imprägnierung* (Vienna, 1904). E. Schneider, "Neues Verfahren zur Ruckfärbung verblasster Schriften," *Korrespondenzblatt des Gesamtvereins der deutschen Geschichts- und Altertumsvereine*, LXI (1913), 163-165. Georg Sello: "Die bei der Zaponverwendung in der Archivpraxis gemachten Erfahrungen," *Korrespondenzblatt des Gesamtvereins der deutschen Geschichts- und Altertumsvereine*, LII (1904), 119-122; *Erhaltung und Wiederherstellung von Archivalien* (Oldenburg, 1905). Georg Sello and Rose, "Das Zapon in der Archivpraxis," *Korrespondenzblatt des Gesamtvereins der deutschen Geschichts- und Altertumsvereine*, I (1902), 195-202.

of order. The present director of the archives is Signore Conte da Mosto.

There is no regular repairing department in the Venetian archives. Numerous manuscripts were seen to be in bad condition, with water-stains, etc.

The high-ceilinged rooms of the former monastery are now lined with wooden cases, which are filled with row upon row of manuscripts. Almost all of the manuscripts are vellum-bound, although some are in rough portfolios; no boxes of any sort were visible. They are arranged according to the departments of state from which they emanated. The windows were wide open at the time of this visit, letting in the damp, cold morning air. Some of the rooms were empty, or nearly so. Heavy layers of dust covered everything. There was no staff visible, except a few monks in the entrance hall. A reading room is set aside for accredited research workers.

The high, glass-topped, dust-covered cases in the dark and gloomy exhibition room were literally stuffed with manuscripts, folded and laid overlapping one another so that the greatest possible number could be crowded into the cases. Among the many manuscripts on view were several relating to American history, such as a letter signed by Benjamin Franklin, Thomas Jefferson, and John Adams, suggesting a treaty of commerce between Venice and the United States, 1784. Several huge Turkish documents were exhibited in cases on the wall. Papal documents with leaden *bullae* attached, and parchment deeds with wax seals (some cracked) were present in profusion. There were some illuminated missals and other service books, mostly of a rather poor quality. The earliest document shown was of the Carolingian period about 828. In the way of later correspondence, all the kings of Italy and many foreign rulers were represented.

BIBLIOTECA APOSTOLICA VATICANA (Rome)

The Vatican Library is largely the creation of the great humanist popes of the fifteenth century, of whom Nicholas V is usually regarded as the real founder. The present magnificent building was erected by Sixtus V in 1588. The library has greatly increased since its original foundation and has frequently been enriched by the acquisition of private and monastic libraries and papal collections. It was separated from the archives by Paul V (1605-1621). Father Anselmo M. Albareda is the present prefect of the library.

The archives comprise the written records of most of the numerous congregations (permanent committees of cardinals for transacting various departments of the business of the Roman Catholic Church), offices, and tribunals in the Holy See. Certain congregations still retain their own records, although documents may in some cases be transmitted to the central repository if requested by a research worker. The archives are often called, even today, the "secret Vatican archives," despite the fact that they have been largely open to public use since January, 1881, in accordance with a decision of Leo XIII. The term "secret archives" is now applied only to that portion which includes the oldest and most important documents, consisting of registers, briefs, correspondence, and all sorts of miscellaneous records. These are stored in seventy-four cases and divided into several groups according to source (such as archives of Avignon or archives of the Secretariat of State) or subject (*Diversa Germaniae*, etc.). The prefect of the archives is Cardinal Mercati.

Extensive alterations in the repair laboratory, incorporating many improvements in working equipment, have recently been made. The two rooms in use have been entirely renovated and a new room adjoining has been equipped with special plumbing fixtures and an electrical stove for the making of paste, dissolving of gelatine, heating of the special gelatine bath, etc. At one end of the main room is a cabinet containing chemicals of various kinds for experiments and certain repair operations. A large standing press and two or three small bench presses comprise the equipment for flattening and pressing documents. Stretched tautly across the room at short intervals are lines of narrow cloth webbing on which to hang freshly repaired or gelatine-treated paper documents to dry before they are pressed. The type of sink newly installed is specially designed, with unusually large drain boards, and at the side a deep, lead-lined basin for acid baths, etc.

Working quarters are provided for about nine men, under the supervision of Signore Arbo Magliochetti. Wooden tables, accommodating two or sometimes three repairers, are adapted to the peculiar requirements of manuscript repair, each having two or three sheets of plate glass ($24\frac{1}{2} \times 18\frac{1}{2}$ inches), let into the top as working surfaces. These glass surfaces can be illuminated if need be by electric light from below, for very delicate repair work; the remainder of the top surface of the tables is covered with brown linoleum. Each

man is supplied with certain tools, such as white enamel ware containers for paste, water, sponges, etc.; aluminum pots and cups for dissolving gelatine; sponges (smaller and of looser quality than at the Public Record Office); several sizes and types of brushes for applying gelatine, paste, etc.; and an assortment of knives for paring parchment and various cutting operations.

The Vatican technique of repairing manuscripts on parchment or vellum differs in certain essentials from that followed at the Public Record Office in London:

1. *The adhesive agent is not paste but gelatine.*

The gelatine, of the quality called *gélatine extra*, is obtained from the *Société des Produits Chimiques Coignet*, 3, Rue Rabelais, Lyon, France, at 35 francs per kilogram. It comes in thin sheets, which are cut up and dissolved either in water or an aqueous solution of acetic acid, as the case may be, preparatory to use. The acetic acid is the solvent if the gelatine is to be used for sticking two pieces of parchment together (25 gr. of gelatine to 100 gr. of acetic acid). To make the gelatine insoluble, after application, it is lightly brushed with formalin (5 gr. in 100 gr. of water). If the gelatine is intended more as sizing, for strengthening delicate parchments, it is dissolved in boiling water (gelatine, 12 gr.; water, 100 gr.) and applied while still hot. More water may be added if the mixture becomes too thick. The use of gelatine as an adhesive permits the joining of new parchment to the manuscript without an overlap—an extremely important point when there is writing on both sides of the manuscript extending to the very edge which is being repaired.

There are numerous Byzantine manuscripts in the Vatican Library, written on purple parchment with gold and silver ink. In the repair of these manuscripts, court-plaster, of the requisite thinness, is used as an adhesive for joining new parchment (also colored purple) to the old or for filling up a crack in the manuscript. Only alcohol is used for dampening prior to flattening.

2. *The new parchment used in repairing is not so bleached as usual, so that the hair side is quite noticeably yellower than the flesh side.*

Parchment of various qualities is supplied to the Vatican Library by Gentili Ferruccio, Via Agostino Bertani, No. 1, Rome.

3. *Dampening prior to flattening is done with alcohol sprayed on the*

document if the document is in an exceptionally fragile condition or if the ink is very bad.

If the ink is good (not carbon or flaky) and the manuscript is in fairly good condition, water may be applied lightly with a sponge. In general, however, the reverse is true, and it is best to avoid direct moistening of the manuscript. A safe method of flattening several manuscript leaves at one time is by light pressing between sheets of dampened absorbent paper, which, however, are separated from the manuscript leaves by dry sheets. When the manuscript leaves are sufficiently impregnated with the moisture to be pliable, they are subjected to heavy pressure between completely dry sheets of absorbent paper.

4. Complete backing of the document with the new parchment is almost never done; filling in missing portions is the usual procedure.

The meticulous refinement of the technique of parchment repair at the Vatican Library may be accounted for not only by superior equipment (primarily the glass working surface), but also by the precious character of many of the manuscripts which have to be treated. It is admittedly a matter of greater skill to repair a beautifully illuminated liturgical manuscript than an ordinary deed. Although not all of the parchment manuscripts needing repair at the Vatican Library are illuminated or even unusually precious, by any means, still the painstaking, careful procedure which has been worked out for the particularly valuable items is largely followed in every instance. The practice of supplying missing portions of manuscript, essentially much more complicated than simple backing, has therefore been perfected to a high degree. It is possible on the illuminated glass working surface to trace on a sheet of new parchment the irregular indentations and jagged outlines of damaged portions of the manuscript, and with a small pair of manicuring scissors to cut precisely along this traced line, so that the new piece will fit exactly into place. As a general rule the two edges to be joined are carefully pared with a sharp knife, thus allowing a slight overlap for additional strength, but if writing extends to the edge of the manuscript such an overlap is manifestly impossible, and the gelatine must serve as the sole bond between the two adjacent edges.

The practice of strengthening damaged manuscripts with a covering of transparent silk gauze was instituted at the Vatican Library by the

late Cardinal Ehrle, prefect of the library from 1895 to 1914, who was also responsible for the use of new parchment and gelatine in the repair of manuscripts on parchment. This is not, however, the sole method of paper repair, as there are frequent instances where the manuscript, while damaged, does not require reinforcement with silk gauze.

For the application of the silk gauze, gelatine once again serves as an adhesive, at the same time imparting new life to the paper. The solution, in water, is much thinner than required in parchment repair, only about 7 or 8 gr. of gelatine being added to 100 gr. of water. If the paper is thick or very decayed the gelatine content may be slightly increased. The silk gauze is simply laid on the surface of the manuscript and lightly stroked with a brush dipped in the hot gelatine solution. The manuscript is hung up to dry before pressing and flattening.

If a paper manuscript is in need of resizing but does not require strengthening with silk gauze, it is briefly immersed in a bath of the hot gelatine. The long, shallow tray of chromium-plated copper containing the gelatine fits into a large, electrically-heated basin filled with water, which serves to maintain the gelatine at the proper temperature. Standing in position over the tray are two uprights of the same metal with a horizontal crossbar over which to draw the manuscript after it has been passed through the liquid, in order to remove excess gelatine before hanging the manuscript up to dry.

It is sometimes desirable to fill in small holes in manuscripts after the silk gauze has been applied. This is accomplished in the Vatican Library by the use of "liquid paper." Unsized wove paper (Italian-made) is cut up into small pieces and placed in a small glass; water and a small amount of flour paste are added. The whole is stirred for about fifteen minutes in a mechanical mixer (of the malted milk type) until the mixture is quite smooth. It is then strained to get rid of surplus water, laid on a glass surface and mashed carefully with a supple, broad-bladed knife to remove lumps, and strained again if necessary. The final result is a thickish, white, pasty-looking mixture, which may be bottled till needed. This "liquid paper" is applied to holes in the manuscript on the point of a knife blade, on both verso and recto of the page. Very little is required—just enough to fill up the hole to the same thickness as the paper of the manuscript. The "liquid paper" adheres easily to the silk gauze with which the manuscript is already covered.

Filling in on a larger scale, when there are large portions of the manuscript completely missing, is done in the Vatican Library with unsized wove paper—either the ordinary Japanese paper or a special quality (heavier in weight) made in Italy. Wheat flour paste is used as an adhesive. The Japanese paper is neither cut nor torn to size, but the surplus portion is removed bit by bit with fine pincers after it has been pasted down. One or two additional layers of wove paper may be applied if necessary to approximate the thickness of the manuscript itself.

Some manuscripts on paper have turned dark brown because of the corrosion of the ink, or exposure to damp, or other reasons. To bleach to some extent this brownish stain and to make the writing more readable, before repair, the following special treatment is prescribed at the Vatican Library: Prepare in two large, rectangular glass jars a 4 per cent solution of potassium permanganate and a 3 per cent solution of oxalic acid, both in water. Place the manuscript between pieces of coarse gauze in a wire screen frame. Immerse the frame successively as follows:

1. In the solution of potassium permanganate (until the reddish color has penetrated the paper) 3 minutes
2. In a basin of cold water (until the reddish color is removed) 3 minutes
3. In the solution of oxalic acid 3 minutes
4. In hot water for only a moment, then in running cold water until thoroughly washed

The manuscript when removed from the frame is laid on a horizontal wire drying frame for at least an hour. Silk gauze can then be applied if necessary, or if not, a gelatine bath alone may be sufficient before flattening.

The reference department is in the Sistine Wing, where there occurred on December 22, 1931, a disastrous collapse of the roof, burying some 15,000 volumes under the débris. The damage was soon repaired, however, and provision made against the recurrence of such an accident. The library and archive stacks are in separate wings. Both are of the latest steel construction and are well ventilated and lighted.

GROTTAFERRATA

In Grottaferrata, a village near Rome, is situated a former Greek Basilian monastery which has been converted into a national monu-

ment by the Italian government. A repair-shop has been established similar to that in the Vatican Library, under the supervision of Signore Aloisi, the chief repairer. Manuscripts and books may be sent here for repair or rebinding by libraries and archives in any part of Italy. Father Nilo Borgia is the director of the institution.⁶

L. HERMAN SMITH

⁶The following may be consulted for additional material on the Italian archives: Guido Biagi: "La conferenza internazionale di S. Gallo per il restauro degli antichi codici," and "Della conservazione dei mss. antichi," *Rivista delle Biblioteche e degli Archivi*, ix (1898), 168-171, 154-160. Gino Borghesio, "Come si salvano le pergamene in rovina," *La Bibliofilia*, xxiv (1923), 349-350. Eugenio Casanova: *Archivistica* (Siena, 1928); "Il primo Congresso internazionale degli archivisti e dei bibliotecari in Bruxelles," *Rivista delle Biblioteche e degli Archivi*, vol. xxi (1910), 137-144; "Relazione sulla conferenza internazionale di San Gallo," *Bollettino Ufficiale del Ministero della Pubblica Istruzione*, vol. xxxvii (1909). Franz Ehrle: "Della conservazione e del restauro dei manoscritti antichi," *Rivista delle Biblioteche e degli Archivi*, ix (1898), 5 et seq.; "Per il restauro dei manoscritti," *Rivista delle Biblioteche e degli Archivi*, vol. xxii (1911), 71-74. Fabroni, "Lettera al Bibliotecario di Modena intorno al restauro dei libri," *Nuovo Giornale dei Letterati* (Pisa, 1806), vol. iv, and *Giornale Pisano dei Letterati* (Pisa, 1806), vol. v. Alfonso Gallo: "Malattie dei libri," *Accademie e Biblioteche d'Italia*, vol. iii (1930); *Le malattie del libro, le cure ed i restauri* (Milan, 1935); "I manoscritti superstiti dell'incendio della Biblioteca nazionale di Torino," *Accademie e Biblioteche d'Italia*, vol. iii (1929); "Il restauro dei manoscritti e dei documenti antichi," *Accademie e Biblioteche d'Italia* (Rome, 1928), vol. i. Piero Giacosa, "Relazione dei lavori intrapresi al Laboratorio di Materia Medica per il ricupero e restauro dei Codici appartenenti alla Biblioteca di Torino," *Atti della R. Accademia delle Scienze di Torino*, xxxix (1904), 1070-1078. Gortani, *L'incendio della Biblioteca nazionale di Torino* (Turin-Genoa, 1904). Icilio Guareschi: *Della pergamena, con osservazioni ed esperienze sul ricupero e sul restauro di codici danneggiati negli incendi e notizie storiche* (Turin: Unione tipografico-editrice, 1905); "Osservazioni ed esperienze sul ricupero e sul restauro dei codici danneggiati dall'incendio della Biblioteca nazionale di Torino," *Memorie della R. Accad. delle Scienze di Torino*, 2nd series, liv (1904), 423-438. Leti: "Studi sulla carta. Sfaldatura del foglio," and "Studi sulla carta e in particolare sulla carta bruciata," *Accademie e Biblioteche d'Italia*, vol. v (1923). Maurizio Mastroianni, *Considerazioni critiche sul restauro degli antichi manoscritti* (Naples: Fr. Giannini & figli, 1912). Mario Morgana, *Restauro dei libri antichi* (Milan, 1932). Augusto Piccini, "La Conferenza internazionale per la conservazione degli antichi codici," *Archivio storico italiano*, 5th series (Florence, 1899), xxiii, 324-329. Sibilia, "Le Malattie crittogamiche dei libri," *Accademie e Biblioteche d'Italia*, vol. ix (1935). Testi: "Malattie e restauri dei libri," *Accademie e Biblioteche d'Italia*, vol. vii (1933); "Storia e tecnica del restauro dei libri e dei manoscritti," *La Chimica* (Rome, 1935), vol. xi. Torri, "I restauri dei codici della Biblioteca di Torino," *MOYSEION*, Vol. i (1923). Giovanni Vittani, "D'un metodo per far rivivere gl'inchiostrati studiati a Milano nel 1792-1793," *Il libro e la Stampa*, vi (1912-1913), 161-176. Pier Ignazio Vottero, *Conservazione e restauro dei documenti* (Pisa, 1912).

THE ILLINOIS STATE ARCHIVES BUILDING

THE problem of suitable and adequate vault space for the storage of records has been a matter of acute concern to the state officials of Illinois for many years. The Archives Division of the Illinois State Library, established in 1921 and organized in 1922, was authorized in 1925 to accept records from all state officials. However, the Archives Division itself was housed in makeshift quarters in the Centennial Building with no vaults and very little room and could accept relatively few archives. Meanwhile a series of fires none of which damaged important records, led up to the destruction of the State Arsenal in 1934, and the burning of all the soldiers' bonus and World War records of the Military and Naval Department. The warning was heeded. At the next session of the General Assembly in 1935 a bill was passed, with but one dissenting vote, appropriating a half million dollars for the erection of a State Archives Building. To this sum the Public Works Administration of the federal government added approximately \$320,000. These funds were sufficient for the building, for its furniture, and for equipping about half of the archives vaults, but none of the departmental vaults.

The architectural work was done in the office of the Division of Architecture and Engineering of the Department of Public Works and Buildings under the direction of Mr. C. Herrick Hammond, supervising architect, and Mr. Joseph Booton, chief draftsman. General contractors were the Simmons Construction Company, Springfield, for the foundations, Charles B. Johnson and Sons, Chicago, general contractor, and the Art Metal Construction Company, Jamestown, New York, for stack construction and filing equipment.

Two other recently completed archives buildings—the National Archives at Washington and the Maryland Hall of Records at Annapolis—were not comparable in size to what the Illinois situation demanded, and both were built before the respective archivists had been appointed or archival establishments organized. Although strongly influenced by both these buildings, the Illinois Archives Building represents a new study of archival needs by both the architect and the archivist. Invaluable assistance was given by the architects of the Washington and Annapolis buildings, by other archivists and especially by the various equipment companies.

Ground was broken by Governor Henry Horner on March 30, 1936 and the cornerstone laid by him on October 16 of the same year. On June 16, 1937 the Public Works Administration dedicated its share in the enterprise to the state in a brief ceremony, at which time the unfinished building was opened for public inspection. Secretary of State Edward J. Hughes, under whom the Archives Division functions, accepted custody of the building on January 17, 1938, though installation of equipment and furniture was not completed until some weeks later.

The site selected was the southwest corner of the state capitol grounds; a plot permitting a planned expansion to four times the present capacity of the building. The present unit faces north towards the state capitol. It is 152 feet long, 67 feet deep, and about 100 feet high, exclusive of a one-story penthouse. Architecturally it harmonizes with other buildings in the capitol group, and especially with the adjacent Centennial Building; the exterior decorative motifs for the two buildings are the same. Like the Centennial Building, the Archives Building is constructed of solid masonry faced with Indiana limestone, the first two stories being rusticated, the upper stories smooth. On the first two floors windows show only on the north front. Third floor windows at the east end of the building are concealed behind ornamental stone grills, which, with a row of pilasters, form the decorative design of the facade. There are no windows in any of the vaults, which occupy the center rear and the upper floors. The Archives Building is connected by tunnels with the Centennial Building and Capitol.

In drafting plans for the building, certain necessities were given basic consideration. First of all, it was to be not an office building but a record storage building. All space not required for archival administration was to be devoted to vaults designed to give maximum protection to records. Secondly the excessive weight of records constituted a serious engineering problem. One four-drawer steel file, loaded, weighs approximately 650 pounds. The Archives Building has a vault capacity of about 6,800 six-drawer-high cabinets, or close to 140,000 cubic feet of records. Because it was desirable to have the administrative offices on the lower floors, most of the weight of the upper vaults had to be carried by the walls of the building. Underground streams and marshy ground under this section of the city make it impossible to have underground vaults. The building is carried on caissons sunk thirty-five feet to bedrock. The rear vaults are built

on their own caisson foundations. Some of the beams supporting the upper floors are seventy-two inches in thickness.

Thirdly the building had to provide storage space for departmental semi-current files. Since its organization, the Archives Division has devoted a considerable proportion of its time to repairing records removed from departmental attic and basement storerooms; these storerooms have been promptly refilled with more records which in turn have fallen into decay before coming into the Archives Division. To eliminate these plague spots storage space has been provided in the Archives Building for such semi-current records as the various state departments wish to retain under their immediate jurisdiction.

All of these objectives have been provided for so far as foresight and available technical knowledge, and of course, the budget, have permitted. The plan developed separates the building into three quite distinct units—administrative offices, departmental vaults, and archives vaults. The administrative offices in the basement and three lower floors, and the departmental vaults above the offices, corresponding to the seventh to twelfth stack levels, surround the twelve levels of archives vaults on three sides in a U-shaped formation. A penthouse for air-conditioning, for elevator machinery, and for the film vault surmounts the building proper. Each section of the building is a fireproof unit from which a fire could not spread to other sections.

The administrative offices separate the rooms open to the public from the workrooms; they connect with the vaults in such a manner as to facilitate reference to the files yet to prevent unauthorized access to them.

The rooms open to the public on the first floor are the lobby, museum, reference room, public catalogue and conference room and public restrooms. On the second floor another lobby, intended also for exhibits, and the archives administrative office are public. These public rooms are in the center of the north and west sides of the building. Also on the west side of the second floor are the archivist's private office and workroom and another conference room, used as a classroom for archival instruction. The public is excluded from the floors above the second.

The workrooms occupy parts of the basement, first, second and third floors at the east end of the building. This perpendicular suite of offices has entrances from the basement and first floor lobby only, and is served by a private stairway and passenger elevator. It com-

prises a photographic laboratory in the basement, a cataloguing-classification room, the document archivist's office and a supply room, on the first floor; another large office with a private office and storeroom, now occupied by the Historical Records Survey of WPA, and the women's staff rooms on the second floor; and a repair-room, two storerooms and the men's staff rooms on the third floor. Staff rest-rooms are equipped with showers. The receiving room is also located in the basement, and has its own freight entrance and direct access to the freight elevator. The secretary of state's Addressograph Department has a separate suite of rooms in the basement. This department operates the secretary of state's photostat, and it seemed desirable to move the department into the Archives Building until the Archives Division has sufficient work to justify the purchase of a second machine. When this time comes, these rooms will be assigned to the Photography Division of the archives. A building storage room, an electrical transformer vault and a mechanical room occupy other sections of the basement.

All offices have cross ventilation and excellent natural and artificial light. Although it is believed that desk lights will be unnecessary, underfloor ducts provide for installation of electrical outlets every four feet. Acoustical plaster is used on all ceilings. Lavatories and electric drinking fountains are provided for each workroom. Electric clocks are controlled from a master clock. There is a code calling system to summon members of the staff from any part of the building; telephones are located wherever needed. Workrooms have dark green linoleum floors, soft green walls and green steel and aluminum furniture.

The public rooms are very beautiful, showing the Williamsburg influence in woodwork and colors. The first floor lobby has Joliet stone walls, a patterned blue and gray book marble floor and an ornate polychrome ceiling with a bronze ground coat. It is entered through a bronze and glass vestibule. Directly opposite the doorway is a mural sculpture by Mr. Alvin Meyer of Chicago, placed on the walls of a curved alcove, in three panels of stone, brilliantly colored by a process recently brought from Germany. Above the mural is an inscription in gold "Archives of the State of Illinois." Below is the inscription "The Records of Human Achievement." The center panel represents Hammurabi holding in his right hand the scales of justice, symbolizing "Law," and in his left hand a lamp symbolizing "Science." At the base of the panel a spread eagle symbolizes "Gov-

ernment." The left panel pictures, from top to bottom, an Egyptian making hieroglyphics, a cave man drawing animals, and a monk writing a manuscript. The right panel pictures a Greek holding a roll of papyrus, an early printer working his press, and a girl seated at a typewriter. The public stairway leading from the basement to the third floor, and the main passenger elevator, are entered from hallways flanking the mural alcove. Stair rails, lighting fixtures, radiator inclosures and elevator doors are in bronze. The star motif is used frequently in floor insets, lighting fixtures, radiator cover ornaments and door studs. The double elevator doors of bronze have elaborate symbolical decorations.

To the right of the lobby is the museum, decorated in Empire style with a white panelled wainscot and dark green upper wall, with gold and black accents. The room is dominated by a large built-in exhibit case between two sets of double doors, leading into the reference and reference library rooms respectively. Four standard wall-type exhibit cases supplement the larger cabinet.

The reference room and first and second floor conference rooms are panelled from floor to ceiling in knotty pine of Georgian style. Appropriate brass and glass chandeliers and side wall lights are used. The furniture is mahogany of Chippendale design. Both flat topped and sloping topped reading desks are provided. Century old full length portraits of Washington and La Fayette, copies of the Rembrandt Peale paintings in the Capitol at Washington, hang on either side of the doorway leading from the reference room to the small reference library stack room. A small hallway behind the attendant's desk leads to the archives vaults. A conference room at the rear of the reference room is intended for the use of persons wishing to dictate, to use typewriters, or to do extended research.

The public catalogue room connects the reference room with the cataloguing-classification room. The ornate barrel ceiling of cream trimmed with gold and red, the chocolate brown walls, the built-in reference tables and the light maple card cabinets make this perhaps the most striking room in the building. A private stairway from this public catalogue room connects the archivist's office with the reference room.

There are two distinct series of vaults in the Archives Building. The archives vaults house those records transferred to the absolute custody of the Archives Division. The departmental vaults house those semi-current records still under the immediate jurisdiction of

the departments of origin. There are twelve tiers of archives vaults and six tiers of seventeen departmental vaults. In addition, there is a two-story vault of extra heavy construction opening off the archivist's workroom. This special vault will house territorial records, enrolled laws, the Constitution and other particularly valuable archives. Both series of vaults use library book stack construction, modified to meet the requirements for records storage. The floors are solid rather than slotted, to check spread of fire between floors. Contrary to the method applied in libraries of suspending all weights from the column uprights, the floors in these vaults carry the weight of filing cabinets, that weight being in turn carried by the columns. The depth of the cabinets requires that the columns be spaced further apart, although they carry much heavier loads than those of library book stacks.¹

Ceiling heights in the vaults are eight feet center to center, as contrasted with the standard seven and a half feet used in libraries. The stack columns are spaced thirty-six inches apart as in libraries, but the aisles in each bay are nine feet wide. This permits the installation either of two rows of thirty-inch-deep filing cabinets facing into the bay, or of two single-faced and one double-faced range of twelve-inch shelving, the aisles of the bay being correct for either type of equipment. Three chases for electric wiring are built into the ceiling

¹ Ill. Dept. of Public works and buildings. Div. of architecture and engineering. Specification no. 30: Bookstack equipment, Archives building, p. 102: "All structural shapes, plates, rivets, bolts, screws and welds to conform to requirements as to strength as defined by the latest edition of the American Society of Testing Materials. All structural steel to meet with the requirements as to allowable stresses as specified by American Institute of Steel Construction. All welding shall be done in accordance with printed specifications of the American Welding Society. Stack columns, struts and other supporting columns are to be capable of carrying the figured loads safely in accordance with the following formula:

$$F = \frac{18000}{L} \sqrt{\frac{I}{18000 r^2}}$$

where F = Maximum static stress per square inch,

L = Unsupported length in inches,

R = Least radius of gyration in inches.

In determining the stresses for columns the following values shall be used.

Filing cases	33 pounds per cubic foot
Bookstacks	30 pounds per cubic foot
Live Load	60 pounds per square foot of aisle area
Live Load	100 pounds per square foot of stairs."

of each bay, permitting an easy change of location for light fixtures to accommodate either type of filing equipment. Flexibility as to types of equipment which can be changed to meet altered circumstances is a new and valuable feature of vault design.

The floors are of pan-type construction. That is, the steel ceiling of one level forms part of a steel reinforced pan into which the four-inch concrete floor of the level above is molded. This gives rigidity without waste of room. The walls of the vaults are a light tan glazed building tile, the ceilings cream. All steel work including equipment and column uprights is a soft greenish beige. The bottoms of the cabinets are trimmed with a three and a half inch strip of black phenolite. The aisles are fitted with strips of rubber matting. All vault lighting is artificial since there are no windows. Doorways leading to a future addition to the building have been blocked in with masonry. Holophane lights are used. Time switches governing lights in each bay prevent waste of electricity and reduce the fire hazard. The archives vaults have their own fireproof staff passenger elevator and stairway. Each floor also has access to the freight elevator through a small hallway. Janitor's slop sinks, which can also be used as lavatories, are provided for each floor of both archives and departmental stacks.

Commercial type steel equipment seemed, after exhaustive study of the subject, better suited to the requirements than the various types of wood and steel boxes in general use in archival and manuscript establishments. With the exception of card records and maps and plans, practically all unbound archival material when filed flat fits into legal or correspondence size drawers. Various commercial stiffening devices known as flexi-files, flexi-blocks, wobble blocks, etc., prevent papers set on end from curling. Excellent card and map drawer units are available in suitable standard styles and sizes.

The standard steel legal and correspondence size cabinets were redesigned to meet Illinois requirements. Six-drawer-high units, thirty and a half inches deep over-all, proved the most economical of space, though that height would be inconvenient for more active use than the records in this building receive. Aluminum stepladders are used for reaching the upper drawers. The height of the cabinets necessitated special designing and special precautions against side sway and tipping; it also seemed essential that drawers should be interchangeable and as dust proof as possible. To combine these two characteristics compromise was necessary. Dust proofing while only

relative was inexpensively achieved by a shelf (part of the cross bracing) between each drawer and by an angle iron lip around the edge of each drawer compartment, against which the drawer head strikes. The drawers are interchangeable.

Drawer slides are the most important feature in the efficiency of a cabinet and the point at which wear and breakdown first occur. The variety of designs used and patent rights held by various manufacturers made it difficult to write ironclad specifications. A use test was therefore required from the successful bidder—opening and closing a loaded drawer, mechanically, ten times per minute, 100,000 times. At nine intervals during the test the machine was stopped, a test made of the number of pounds of pull required for opening the drawer, and the bearings wiped clean but not recoiled. It is of interest to note that the maximum efficiency of the test sample seemed to be reached at 80,000, but that almost no wear on moving parts was perceptible at the close of the test, giving assurance of practically unlimited life in actual use. The base of the cabinets is recessed and the drawers raised three and a half inches from the floor to protect against splash marks on the cabinets from cleaning the floors.

Standard library-type steel bracket shelves are used for ordinary volumes. Heavy books and those having fragile bindings are kept in specially designed sliding shelf cabinets. Roller shelves are hard on bindings, difficult to clean and not readily adjustable in height. The sliding shelves used are mounted on small rollers and slides adapted from the principle of the cradle suspensions used in filing cabinets. This device permits extension of the shelf twelve inches beyond the face of the cabinet so that the volumes can be lifted rather than dragged from the shelf. Shelves are adjustable every half inch and each has a sloping label holder. Safe lockers with blinder protected combinations are provided for the more valuable records in the special archives vault. Other records in this vault are housed in locked cabinets.

The Photographic Laboratory was planned by Dr. Vernon D. Tate, of the National Archives, and the Eastman Kodak Company. The air-conditioned dark room, entered by a light baffle, is built in one corner of the room. It is equipped with a stainless steel double washing tank, a work-table cabinet with an alberene stone top and splash board with appropriate electrical outlets for developing and enlarging apparatus, an electrical refrigerator with connections to the temperature controls of the sink faucets, and ample floor space

for other processing equipment. A supply closet and a chemical mixing cabinet and sink, the latter also of alberene stone, form part of the exterior walls of the dark room. There is a thirty foot clear space for projecting microfilm on a screen. At present the Archives Division is using a Leica camera and a Model B optigraph reading machine. Developing machines and other microphotographic equipment will be added later.

Because of a state law prohibiting storage of films within a building it was necessary to build the film storage vault in the penthouse. The ruling that this law applies also to the safety acetate film now used in microphotography came too late to permit rearranging the plan to put the photographic laboratory near the film vault. However, the processing of film and its later use for reference are two separate matters, and it is not anticipated that this separation will be as inconvenient as at first feared. The film vault, eight and a half by thirteen and a half feet, is in one corner of the penthouse. It has its own air-conditioning unit which will keep the temperature and humidity at a constant 50° each. A vent covered with thin aluminum foil would expel the contents of the vault onto the roof in case of fire or explosion. The building fire alarm system also has a separate circuit into this vault. Equipment for the storage of film has not yet been decided upon. A biscuit warmer of the type used in restaurants is used to bring the temperature and moisture content of film removed from the vault to the proper condition for use in the projecting machines.

The chief enemies of records are fire, improper atmospheric conditions (excess heat, dampness, corrosive gases, etc.), dirt, pests (insects, rodents, fungus and other bacteriological growths), and human tampering and theft. The records in the Archives Building are safeguarded as far as possible from all these enemies.

The Archives Building is fireproof and is separated from its nearest neighbor, the Centennial Building, by 128 feet. The walls are of solid masonry. Vaults are segregated by fire walls from the offices and from each other. All vault entrances are protected by heavily insulated steel doors and by automatic rolling shutter fire doors each having a one hour underwriters' label. Elevators and public stairways are incased in fire walls. Ventilating shafts run outside the vault walls and have automatic fire cut-offs where the ducts enter the vaults. There are no windows in the vaults. There is no heating plant in the building, steam being supplied from the state power plant. Waste

paper, temporarily stored in a fireproof bin, is removed from the building each evening immediately after closing time. No smoking is permitted anywhere in the building. Watchmen are on duty twenty-four hours of the day and the building is closed and locked except during office hours.

The Aero-Automatic Fire Alarm System has been installed throughout the building. The fire detecting element of this system is air contained in continuous lengths of small flexible copper tubing attached to the ceiling in a continuous circuit for each fire area. Each end of the circuit terminates in a small chamber, the walls of which are flexible metal diaphragms. When fire starts, the sudden rise of temperature causes the air within the tubing to expand and forces the flexible diaphragm to bulge outward, making electric contacts which initiate the alarm. Simultaneously a fire gong is rung in the building, an indicator in the engineer's room shows the location of the fire and the alarm is sounded at the state power plant and the city fire department. Manual fire alarms are also provided at all strategic places. Cabinets in each room hold one and a half gallon and two and a half gallon hand fire extinguishers. Carbon tetrachloride is used in the extinguishers, this fluid being harmless to papers and inks.

Steam heat is used, controlled by thermostats operating by zones. The vaults are equipped with air-conditioning ducts, though the refrigerating machinery required for summer temperature could not be had within the building budget. This will be added at some future date. In winter the air is tempered, washed and oil filtered, and in summer the air washing machinery is automatically cut off when the humidity rises. The oil filters are used the year round and tests conducted by the State Department of Health indicate that all deleterious gases prevalent locally will be eliminated. The architect recommends individual air-conditioning units for the offices as proper humidity and temperature for the vaults would be uncomfortable for workrooms.

Alternating electric current is purchased from a public utility company. Emergency lights permitting a safe exit from any portion of the building are supplied with direct current from the state power plant.

All records coming into the building pass through the receiving room, where they are cleaned and fumigated before being taken to the vaults. The cleaning apparatus used was copied from that designed by the U. S. Bureau of Standards for the National Archives. Dust is

blown out of the files by condensed air and into vacuum filters. This method is less injurious to paper and more efficacious in removing loose dirt than straight vacuum cleaning.

For fumigating records received a haskelite plymetl fumigator vault is used. The fumigant employed is a mixture of three parts of ethylene dichloride by volume to one part of carbon tetrachloride, which is gasified by electric heat. This fumigant is harmless to human beings but destructive to all forms of insect life. The process requires about twenty-four hours to each charge. In addition, the vaults will be closed from time to time for fumigation by a portable centrifugal insecticide vaporizer to take care of any possible migration of insects from other buildings.

Keeping records clean is perhaps the most serious problem faced by archivists, and careful study was given it in planning in the State Archives Building. All vault walls are faced with glazed tile. The concrete floors have been treated with Johnson's Penetrating Floor Seal and the aisles covered with rubber matting. There are no exposed beams, pipes, or other dust catching projections. Cleaning will be a simple matter of oil dusting and an occasional going over of walls and cabinets with damp cloths. The construction and the air-conditioning system adopted should go a long way towards solving the cleaning problem.

Records in need of repair are taken to the vaults and placed in temporary containers. As time permits they are removed to the repair-room for treatment. At present the Archives Division is still employing the old crêpine method of repair. Eventually it is hoped that a less expensive and more perfect apparatus will be developed for repair by the lamination method advocated by the National Archives. A humidifying chamber and mangle for use in flattening papers will also be added later. At present the only new equipment provided for the repair-room is a large cork-board wall panel for use in mounting maps and large documents.

Making the records readily accessible to users without too many formalities, while safeguarding the vaults against improper access received careful, and it is hoped, successful, consideration. There are only three entrances to the building—the main entrance at the first floor level and the freight and Centennial tunnel entrances at the basement. The freight entrance is unlocked only for the receipt of deliveries. The other entrances are locked outside of office hours. An ingenious distribution protects the master and sub-master keys. Ordi-

narily, minor employees, including janitors, are admitted to the various rooms by the watchman. A few keys to certain rooms for which staff members are directly responsible are issued on signed requisitions.

The archives vaults have but two direct entrances—one from the reference room and one from the cataloguing-classification room, both on the first floor. These entrances are locked when not used by a member of the staff. The freight elevator serves all floors of the archives, special and departmental vaults, but does not have direct entrance to any vault.

All records in the archives vaults are under the absolute control of the Archives Division and may not be taken from the building. Access to the archives vaults is strictly limited to members of the regular clerical and professional staff of the Archives Division. The records may be consulted in the reference room and photographic or other copies are made by the Archives Division and supplied at cost. Persons using the reference room are required to sign a registry book and to fill out a written application for the documents to be consulted. Before the reader leaves the reference room, he must return all records to the person in charge, who receipts and returns the duplicate copy of the application and files the original copy as a permanent record of use.

The departmental vaults are used for the storage of permanent records, generally from about three to ten years old, which must occasionally be taken back to the departments of origin for temporary use. One vault is assigned to each elective state officer and to each office under the Administrative Code. The Archives Division maintains a censorship over what goes into these vaults to insure that they shall be used for the storage of archives only; it keeps a general inventory of contents; and it furnishes supervised janitor service. The departments themselves are responsible for the arrangement, filing, removal, return and refiling of their records. Each departmental vault is divided into a number of caged bays, each with a key which opens that bay only. The departmental clerk desiring to go to a vault signs his name and division on a card which he presents to the elevator operator, showing his key as a pass. The operator stamps upon this card the time of entering and leaving the vault and files the card in a locked drawer. These cards are sent to the respective department heads at the end of each month, thus permitting them to keep an exact check on access to their vaults at all times. Departmental clerks

are not permitted to take outsiders to their vaults. The Archives Division extends the use of its reference room to persons desiring to consult records in the departmental vaults, but requires that such records be brought from the vaults and their use and return supervised by representatives of the departments concerned.

In an article of this length it is impossible to give detailed descriptions of many of the features of the Illinois Archives Building or technical information about the equipment. Both the architect and the archivist will be glad to give further information to interested persons.

MARGARET C. NORTON

REVIEWS OF BOOKS

The Historical Records of North Carolina, Volume I, The County Records, Alamance-Columbus, edited by C. C. Crittenden, state director of the Historical Records Survey, and Dan Lacy, assistant state director. (Raleigh, North Carolina. The North Carolina Historical Commission, 1938.)

The Historical Records Survey of the Works Progress Administration for North Carolina has been fortunate in enlisting the assistance of the North Carolina Historical Commission in presenting in permanent and worthy form its survey of the county archives of the state. This volume presents an introduction and the lists of county records for Alamance to Columbus counties; approximately 340 pages are allotted to twenty-six counties; on this average something like a thousand pages will be needed to complete the undertaking in the succeeding volumes which may be expected.

North Carolina, casual in her record keeping as in her government in the Colonial period, has long since achieved an honored position among the states for the high historical standards under which her historical publications have been made. The present reviewer can testify how very little in the Public Record Office has escaped the compilers of the *Colonial Records of North Carolina*. In the work under consideration, one part of the introduction adequately sets forth in the large the state's history and her historical publications. It goes on to take up opportunities of research in the North Carolina county records; it describes in elaborate detail the records kept by the various county offices of records, ending with detailed alphabetical lists of the various types of records.

There follow the county lists giving in brief the date and scope and short descriptions of the records of each individual county. The usual record offices are the Register of Deeds, the Clerk of the Superior Court, the Sheriff, the Treasurer, the Auditor or Accountant, the Superintendent of Schools, the Superintendent of Health, the Superintendent of Public Welfare; though not all counties possess all these offices. There is sometimes a separate head for Historical Commission Archives. Certain counties such as Albemarle and Bute which no longer function are included in the alphabetical lists of counties, under which their Historical Commission Archives are listed. Each county is prefaced with about a page respecting its history, population, growth, county seats, record repositories, etc. In this connection it would be well if derivations of county names were given a little more exactly.

All in all the work is a worthy addition to the long series of North Carolina historical publications. Not much higher praise can be given any work or handbook of historical scholarship.

THEODORE CALVIN PEASE

"The Science of Archives in South Africa," by Lt.-Col. C. Graham Botha, chief archivist of the Union, president. Presidential address delivered 5 July, 1937. (Johannesburg: Published by the South African Association for the Advancement of Science, 1937. Reprinted from the *South African Journal of Science*, Vol. xxxiv, pp. 1-17, November, 1937.)

Archivists needing to explain their work to the public and to enlist nonprofessional support may well look over the example provided by the veteran archivist of South Africa on the significant occasion of his being honored by the leading academic organization of his country. One can with interest compare his *Report of a Visit to Various Archives Centres in Europe, United States of America, and Canada* (Pretoria: Government Printing and Stationery Office, 1921) with this scholarly review of archival theory and practice in the Union, as a record of accomplishment. The paper is nontechnical but clearly expository.

In Colonel Botha's defense of calling the field the "science of archives," not only "because it can be described as 'systematised, organised, formulated knowledge,' but also when the relation between its methods and those of other sciences is taken into consideration," and in his discussion of archival administration there is tempting bait for the students of terminology. Those who feel that there is no such "science" and who ponder over the choice of an adjective may be intrigued by the following: "The importance of proper archival administration has led to the science of archive economy. The primary elements of this science are (a) the bringing together under one administration of all archives not in current use, (b) the efficient and scientific classification and general administration of documents so centralised, and (c) the custody of the archives under competent officials. The activities of the archives administration and science are identical."

Colonel Botha's discussion of the duties of the archivist, as to physical and moral defense of archives and as to serving the special needs of students, follows naturally the British precedent in Jenkinson's *Manual*. In specific relation to South African problems there are references to some commendable features. Among these is the mention of the appraisal and disposition of valueless records. Colonel Botha explains the peril to important records and the complication of archival work caused by accumulation of ephemeral matter, and makes the significant observation that the archivist "is concerned with the archive-maker of the present and the 'weeding out' of types of his records." He is fully conscious of the need in this connection of study of governmental organization in order properly to appraise records. He refers to the highly desirable legal provision under which "the authority to destroy emanates from the archives which acts in conjunction with the department whose records are under consideration."

In order to stimulate the interest of lay listeners, Colonel Botha concluded his address with a reference to the most spectacular recent scientific develop-

ment in the field, that of photography, and with an illustration of historical facts made available through archives comprised in a history of road building in the Union.

PHILIP COOLIDGE BROOKS

The National Archives

The Selection of United States Serial Documents for Liberal Arts Colleges, by Kathryn Naomi Miller. (New York. The H. W. Wilson Company, Publishers of Indexes and Reference Works, 950-972 University Avenue, New York, N.Y. \$2.50.)

Under the auspices of the Public Documents Committee of the American Library Association and the Graduate Library School of the University of Chicago, Miss Kathryn Naomi Miller has prepared a study to determine the importance of federal documents to the library of the liberal arts college. This report was financed by the Graduate Library School of the University of Chicago and was compiled with the assistance of a number of WPA workers. Mr. William Randall, of the University of Chicago, supervised its preparation.

Mr. A. F. Kuhlman, chairman of the Public Documents Committee of the American Library Association, has prepared a preface to the volume which gives the historical background of the problem treated, emphasizing the growing importance of the use of primary sources in various college subjects and the need for making these sources readily accessible to instructors and students. The problem is then discussed by Miss Miller in a detailed and interesting fashion, with a clear-cut picture of the objectives of the investigation and the procedure by means of which they were attained.

Eight hundred twelve college instructors and seventy-six college librarians have herein given their opinions as to the importance of the serial publications of the federal government to the various subjects taught in four-year colleges by means of ranked lists consisting of 737 document titles. Lists submitted to them were ranked by means of check marks indicating the items which they considered desirable or indispensable to their particular subjects.

The major conclusions drawn from this tabulation are as follows: An increased number of depositories for government documents in liberal arts colleges is needed; a great number of government documents are indispensable to various college courses, particularly the social sciences; greater co-operation between college librarians and instructors is necessary for the efficient selection of documents; present governmental limitations of one depository of government documents to each congressional district should be expanded to allow greater liberality in distribution.

Third Annual Report of the Archivist of the United States. (Washington. United States Government Printing Office, 1938.)

The history of the establishment and a description of the organization and

work of the National Archives is concisely summarized by the archivist of the United States in his report for the year ending June 30, 1937. Briefly, he discusses the problems of selection and tells of the enormous task of gathering together the scattered archives of 150 years. To collect those archives, it was first necessary to survey all depositories of federal records. This was begun in the District of Columbia in May, 1935, and continued through 1937 at which time 5,659 depositories containing 2,601,020 cubic feet of paper records, 17,151,529 feet of motion-picture films, 2,345,998 still-picture negatives, and 5,343 sound recordings had been covered. At the same time, beginning in January, 1936, a survey was made by the WPA of federal archives outside the District of Columbia; by June 30, 1937, the most important records in all states had been listed.

Out of all this accumulation of records, naturally only a portion are of sufficient importance to be saved. According to the archivist, therefore, the National Archives has as one of its chief functions the careful examination of all documents turned over for disposal in light of "(1) their value to the agency reporting them; (2) their value to other government agencies; (3) their historical interest."

The extensive cleaning and repairing required is carried on by specially trained archives workers. All paper records are fumigated and cleaned before they are sent to the stacks. During the last fiscal year, approximately 45,000,000 loose documents and 30,479 bound volumes were cleaned; 35,673 units (sizes varying from single volumes to 1,200-pound boxes) were fumigated. All folded papers must be unfolded, and though a worker's daily output is from 1,500 to 2,500 sheets, there remain, as may be imagined, millions yet to be cared for. Repairing of fragile or damaged records is done by "lamination under heat and pressure between sheets of cellulose acetate foil."

Reports of the various divisions of the National Archives give in more detail the specific difficulties met, the equipment installed, and the work so far accomplished. In the appendix are the report of the national director of the WPA Survey of Federal Archives outside the District of Columbia, a list of "books and articles published, papers read, and addresses delivered by members of the National Archives staff during the year ending June 30, 1937," a guide to material in the archives, including, of course, the seventy-four new accessions, and also the legislation and regulations concerning the archives.

Adding much to the attractiveness and interest of the archivist's report are the excellent illustrations which include photographs of the Archives Building, the two Faulkner murals of the Declaration of Independence and the Constitution of the United States, storage cabinets for nitrate film, and reproductions of the first amendments to the Constitution as proposed by the House of Representatives.

Seventh Annual Report of the Archivist, University of Virginia Library, for the Year 1936-37. (University of Virginia, 1937.)

The library of the University of Virginia has been enriched by several important accessions of historical manuscripts during the past year, according to the report of the archivist. The largest collection acquired was the papers of John Warwick Daniel which cover the years from 1860 to 1910. In this are about one hundred war letters written by him to his father and family from 1861 to 1865, pocket diaries for parts of 1901, 1903-1905, and 1907, and numerous books of clippings on his activities as United States senator.

The Withrow family papers for 1880-1895, the Minute Book of the Charlottesville Lyceum, 1845-1856, the letters and accounts of the firm of Daniel Grinnan and John Mundell, 1790-1830, and a manuscript volume bound in the seventeenth century and containing, on vellum, fifteenth century copies of two of the writings of St. Thomas Aquinas are among the other additions. Included in the valuable documents lately deposited with the university library, are the Edward P. Buford collection, 1895-1931, two Civil War diaries of Robert Larimer of the Sixty-second Regiment, Ohio Volunteer Infantry, and the papers of the William Daniels, father and son, for the years 1816 to 1885.

Virginia newspapers now belonging to the library include issues, dated between February, 1808 and January, 1809, of the *Virginische Volksberichter*, the first German paper of the state. From the Henkel press of New Market, Virginia, on which the *Volksberichter* was printed has also come a "unique collection" of theological and educational works in German and English published in the early nineteenth century.

The minutes of the Board of Trustees of Falmouth, Virginia, for 1728-1813, 1828-1868, have been photographed as has Major Henry Bedinger's Military Order Book for the St. Clair Indian campaign in the Northwest in 1791. An accession of microfilm copies of books printed in England before 1550 has been promptly utilized.

In the appendix of the report is a bibliography of Baptist church manuscripts belonging to the Virginia Baptist Historical Society. This organization has today, largely through the work of its founder, Dr. Charles H. Ryland, and of his son, Dr. Garnett Ryland, the most extensive collection of Baptist church records of one state to be found in the country. A short list of works relating to the rise of the denomination in the United States, and particularly in Virginia, is also given. In the bibliography the churches are arranged alphabetically by county under each association, and where the dates of the founding are known they are printed in parentheses. References are made to printed minutes and historical sketches in the possession of the society.

SHORTER NOTICES

The Journal of Documentary Reproduction, a new quarterly publication of the American Library Association, has made its first appearance with a number for winter, 1938. Mr. Vernon D. Tate, of the National Archives, is managing editor. A near-print process has been utilized, the journal having a page size of 5½ by 8½ inches. According to the sub-title, this is "a quarterly review of the application of photography and allied techniques to library, museum, and archival service." The importance of photography and related processes in the reproduction of documents and manuscripts has taken such long strides within recent years, according to the foreword of this first issue, that a dependable central source of information is necessary. Development and improvement in this field, so invaluable to science and scholarship, continue from day to day; thus it would seem that a journal devoted to techniques, accomplishments, and projects undertaken is quite timely.

In his introduction to the journal, Mr. Charles E. Rush, chairman of the editorial board, aptly states a case for it:

"In recent months there has developed an increasing demand for a professional periodical devoted to the use of photography and related processes in the reproduction of materials in print and manuscript form. . . .

"If science and scholarship are to receive the greatest benefits from the applications of these means to definite educational ends, they must be provided with a common meeting ground for discussion and a current source of knowledge centered on specific needs. The necessity for an independent, critical, impartial journal, published on a non-profit and coöperative basis, has been expressed by representatives of scholars, scientists, archivists, librarians, editors, authors, and other interested groups. . . ."

It is anticipated that future numbers of the journal may contain, among other things, articles of general interest; technical articles; research papers dealing with equipment, materials, and procedure; lists of available microfilm; papers on documentation problems; and departments devoted to questions and answers, foreign progress, bibliographies, and reviews.

The October, 1937, number of the *Bulletin of the Business Historical Society*, published at Baker Library, Boston, bears the title *The Preservation of Business Records*. It falls into two main parts. The first is an article on materials and methods by Mr. Ralph M. Hower, editor of the society. It emphasizes the importance of business records to business firms themselves, to historians, and to the general public. In making a proper selection of materials for preservation, it is of course necessary to choose between what will give sufficient and dependable information about all phases of a particular business and what will merely increase the bulk of the records. Mr. Hower

offers specific suggestions for effective preservation; his final admonition is: "In point of age a firm's records may not be historical today, but time will soon bestow that quality upon them. Save them for tomorrow's historian, and start saving today!"

The second division of the *Bulletin*, an appendix compiled by Mr. Ralph Ells, with the aid of a grant obtained through the Joint Committee on Materials for Research, is a study of the methods of specific business firms in the preservation of their records; the information was obtained by visits to various business houses and interviews with their officers.

Almon R. Wright, assistant classifier in the Division of Classification of the National Archives, gives some interesting highlights on the potential uses of the records of the war-time Food Administration in his article "Food and Society, War-Time Archives of the U. S. Food Administration," *The American Scholar*, Spring, 1938, p. 243. Although the amount of this material is vast and unwieldy, Mr. Wright feels that with the aid of classification and guidance, researchers of the future will find it extremely valuable in tracing various social and economic trends during the war-time period.

Conditions existing in the county records of Carroll and Brown counties, Illinois are quite similar, according to two recent publications of the Historical Records Survey, *Inventory of the County Archives of Illinois*, Brown County (93 pages), and *Inventory of the County Archives of Illinois*, Carroll County (103 pages). According to these reports there are few gaps in the records of the counties from the respective dates of their foundation. Facilities for their housing and care are adequate. In Carroll County ninety per cent of the documents are kept in easily accessible fireproof vaults; in Brown County, however, there is a rather conspicuous absence of this type of accommodation.

These inventories contain the usual type of information included in such publications: historical sketch of county, description of governmental organization and records system, details of housing, care and accessibility of records, and description of county offices and their existing records.

The *Inventory* of the church archives of Bryan County, Oklahoma, a part of the Historical Records Survey compiled under Robert H. Slover, state director, provides a short guide to the history of the twelve denominations and their numerous churches in the locality. Data given concerning each congregation usually include the "name and location of church, name of denomination, date organized, date of any lapse, previous buildings, date of dedication of present building, rebuilding; special features including architecture, bells, inscriptions; first settled clergyman, his tenure and educational background; present pastor and address; dates and number of volumes of minute books, register books, and financial records of the church and its auxiliary

organizations; unpublished historical sketches, published histories, or historical sketches, and other miscellaneous material such as origin, previous name, and brief history of the church." There are twenty-four pages.

A *Summary of Legislation Concerning Vital Statistics of Rhode Island*, has been prepared by Andrew J. Pryor, state supervisor of the Historical Records Survey.

Miss Harriet Byrd conducted the survey of the local records in the compilation of the *Inventory* of Lee County, South Carolina.

Differing considerably from most county archive inventories because of the unusual historical character of the government unit is the inventory of the records of the municipality of Brazoria, Texas. Included in it are all extant records from its creation, April 28, 1832, to the beginning of county government under the Republic of Texas, February 20, 1837, and some miscellaneous documents dating from 1787 to 1837.

The state director of the HRS, Ike Moore, describes the publication in these words:

"The *Inventory* is divided into four groups on the basis of contents: (1) land records, (2) marriage records, (3) estates, and (4) court records. The land records consist of two volumes, *Record of Spanish Deeds*, which contains copies of the original instruments in Spanish, and *Transcribed Spanish Records*, which contains English translations of the original instruments. Marriage records comprise bonds, agreements, and contracts, which were accepted until the religious ceremony could be performed by a Catholic priest. Estates include cases probated or containing instruments prior to February 20, 1837. The general probate papers of Brazoria County were examined for these. Court records contain five separate dockets, alcalde court papers, and proceedings of the District Court of Brazoria County in cases begun before February 20, 1837.

"With one exception (a file docket and fee book without dates or case numbers), the Historical Records Survey has prepared an index for each of the entries in the *Inventory*. A general index has been made that includes all proper names appearing in the *Inventory*, nearly 1,000 in all."

An *Inventory* of Denton County, Texas, records has been prepared by Miss Nettie Egan and D. U. Fox.

An *Inventory* of the archives of Morgan County, Utah, has been prepared under the direction of King Grant Wickwire, state field supervisor of the Historical Records Survey.

As a special publication of the Historical Records Survey in Utah, there has been issued a volume giving the census of Weber County for 1850, a

description of the county government of the provisional state of Deseret, a list of the records required by the state of Deseret, and a map of the county boundaries of Utah.

The census (twenty-one mimeographed pages) is the first taken for the region which, at the erection of the territory of Utah on September 9, 1850, included country extending from California on the west to Dakota on the east. In this listing of some 1,141 persons, which does not include the forty-six residents of Green River precinct, there is given the "name of every person whose usual place of abode on the first day of June, 1850, was in the family," his age, sex, the profession, occupation, or trade of every male over fifteen years of age, the value of real estate owned, the place of birth, and notes regarding school attendance, illiteracy in persons above twenty years, and whether or not the person was married within the preceding year.

The essay on the county government of the provisional state of Deseret was written by Dee Bramwell, legal research worker of the Survey.

According to a report of February 20, 1938, issued by Hugh O'Neil, state editor, other work in Utah has included the completion of three county histories. In addition 109 individual biographies have been compiled, 88 pioneer diaries of 4,848 pages have been copied, and 277 interviews with pioneers have been recorded.

In the report made September 1, 1936, by a commission authorized by the Vermont legislature and appointed by the governor to survey the early records of counties, towns, and villages of the state, there is presented an interesting and enlightening picture of the housing and condition of Vermont local archives. Of 134 towns, excluding all cities and villages, only three have really fireproof buildings in which their records are housed. In thirty-eight of these towns all records are always kept in safes or vaults, but in ninety-six towns a part, and sometimes nearly all the records are "habitually kept outside the safes or vaults, in places that are in no way proof against fire or vermin." The report reveals an entirely unsatisfactory record-keeping system, and shows that only a very few of the valuable documents which cover a period of 150 years are comparatively safe from destruction. Various methods of remedying the situation are discussed, among them the construction of a suitable archives building in each township and the appointment of trained custodians. The establishment of a permanent archives commission with power over all records, state and local, and the right of supervision of archives not kept in a central repository is recommended. Members of the body making this survey were John Spargo, chairman, Daisy B. Williams, Rawson C. Myrick, Dorman B. E. Kent, and Jerome Johnson.

An *Inventory* of the archives of Pend Oreille County, Washington, has been prepared by Mrs. Omah Nunnally, under the direction of Herman J. Deutsch, state director of the Historical Records Survey.

NEWS NOTES

THE SOCIETY OF AMERICAN ARCHIVISTS

Minutes of Council Meeting, December 31, 1937

The council of the Society convened at 8:30 A.M. at the Bellevue-Stratford Hotel in Philadelphia. The president, vice-president, secretary, treasurer, editor, and Dr. Buck, Miss Norton, Dr. Paltsits, and Dr. Wroth attended. The following fourteen individual and three institutional applicants were elected to membership, bringing the net total membership of the Society to 229 individuals and twenty-one institutions:

John E. Abbott	Museum of Modern Art, New York City
John W. Bornman	The National Archives, Washington, D.C.
Lloyd A. Brown	William L. Clements Library, Ann Arbor, Mich.
John Goodman	The National Archives, Washington, D.C.
Anne K. Gregorie	University of South Carolina, Columbia, S.C.
Iris Johnston	Roone Library School, Wuchang, via Hankow, China
Ralph H. Lutz	Hoover War Library, Stanford University, Calif.
Frederick C. Packard, Jr.	Harvard University, Cambridge, Mass.
Francis S. Philbrick	University of Pennsylvania, Philadelphia
Sears F. Riepma	The National Archives, Washington, D.C.
Louis D. Scisco	Washington, D.C.
Eugene A. Tilleux	Works Progress Administration, Washington, D.C.
R. W. G. Vail	American Antiquarian Society, Worcester, Mass.
S. Ambrose Wetherbee	Archives Division, Illinois State Library, Springfield, Ill.

Archivo del Ministerio de Relaciones Exteriores, Caracas, Venezuela
McCormick Historical Association, 679 Rush St., Chicago, Ill.
University of Washington Library, Seattle, Wash

A budget for the calendar year 1938 was voted based on estimated assets of \$2,585, including the estimated balance on hand, accounts payable, and expected new and renewal memberships. The following appropriations for expenses were made: secretary's office, \$250; officers and council, \$10; committees, \$75; publication, \$1,000; leaving an estimated balance at the end of 1938 of \$1,250.

It was voted that the treasurer be authorized to pay bills in excess of the budget allowance only with the approval of the finance committee.

It was voted that all matter relating to subscriptions and advertising for

The American Archivist be addressed to the secretary and that funds for subscriptions and advertising be collected by him and transmitted to the treasurer.

It was voted that control of exchange of publications be in the hands of the editor.

The council approved the name of the University of Illinois as "sponsor" in the journal.

It was voted that the mailing list of the Society be considered confidential but that exceptions may be made for professional purposes at the discretion of the secretary.

It was voted that the president be authorized to appoint a committee on business archives.

The council adjourned at 11:30 A.M.

PHILIP C. BROOKS, *Secretary*

The final meeting of the Pacific Coast Branch of the American Historical Association, held at Seattle December 30, 1937, was a joint session with the federal Historical Records Survey and the Society of American Archivists, at which a series of papers on archival problems was presented. Professor Herman J. Deutsch, of State College of Washington, acted as presiding officer. Two of the four papers indicated the usefulness of particular archival collections to historians. Professor R. C. Clark, of the University of Oregon, described in some detail the files of records relating to the Columbia Department of the Hudson's Bay Company which are preserved in the company's archives in London. Mr. W. Kaye Lamb, provincial librarian and archivist at Victoria, B.C., offered a more general analysis of the official records of British Columbia for the Crown Colony Period, 1849 to 1871. The remaining papers dealt with administrative and technical aspects of archival economy. Dr. Charles M. Gates, of the University of Washington, contributed a discussion of "The Administration of State Archives," in which he called attention to a number of the problems that arise with the organization of state archives establishments, and summarized the efforts that are being made to solve them. Mr. L. Herman Smith, of the Huntington Library, described the equipment and techniques used by that institution for the preservation and repair of the manuscripts included in its collections, and showed a number of illustrative slides.

The session, which was well attended, indicated an encouraging interest in the possibilities of archives work on the Pacific coast. The four papers presented have been published together in the January, 1938 issue of the *Pacific Northwest Quarterly*.

NORTH CAROLINA

The North Carolina Historical Commission has installed twenty-one steel cases and 1,500 steel boxes to house loose manuscript materials. The boxes

are used primarily for court papers from the counties. Two hundred and twenty-five boxes or sixty-seven thousand pieces of court papers from Bertie County have been arranged, catalogued, and made available for public use. Materials from other counties are being arranged preparatory to cataloguing. Sixty-seven hundred and fifty-eight pieces of court papers from Gates County have been accessioned, and 24,888 pieces from Hyde County have been arranged and will soon be made available for public use.

SOUTH CAROLINA

The oldest public record now extant for the South Carolina back-country has been identified and included in the Abbeville County archives inventory, recently compiled by the Historical Records Survey, according to the announcement of Lawrence M. Pinckney, state administrator. This early record "Book A-B," entry sixty-two of the inventory, contains minutes of the first ordinary's office to be established outside of Charleston, and dates back to 1782, when the British were still in possession of the state capitol. It was kept in one of the first of the back-country courthouses (near the site of the present-day ruins of old Star Fort), built by Patrick Calhoun, father of John C. Calhoun, acting as "surrogate" for John Ewing Calhoun, the ordinary of the old Ninety-Six District.

The Survey, a unit of the Works Progress Administration, Division of Women's and Professional Projects, of which Mrs. Margaret D. Davies is the South Carolina state director, has similar inventories in progress in each of the 3,066 counties of the country. The Abbeville inventory is among the first to be completed of the forty-six in the South Carolina series. A large number of copies of the archival guide, which will be published shortly, will be distributed free to state and local government agencies and public libraries in South Carolina, and to a number of libraries and government agencies outside the state.

According to recent reports of Dr. Anne K. Gregorie, state director, considerable work is being done on other South Carolina inventories. Thus far records have been listed in all forty-six counties of the state, twenty inventories having been completed in first draft form. The Lee County inventory has been mimeographed. In addition, ninety per cent of the state archives, and the records of sixty-four of the 350 cities and towns have been inventoried. The records of 1,929 of the 5,714 churches have been covered, and approximately one-fourth of the private manuscript collections of South Carolina have been listed. Survey workers have rearranged large quantities of state archives transferred from the basement of the Capitol to the World War Memorial.

GEORGIA

The Department of Archives and History has completed copying, indexing, and binding sixteen volumes of the colonial records of Georgia. Copies of

these volumes have been made available in the Georgia Historical Society, Savannah. The department has also published *Georgia's Official & Statistical Register 1933-1935-1937*. This volume contains legislative histories of state departments, schools, and courts; biographical sketches of state officials, 1933 to date; election returns of 1932, 1934, 1936, and special elections; county officials elected since 1932; list of county historians (official), and published county histories; list of post offices in the state; list of Georgia National Guard, etc.

FLORIDA

Polk County now has a fairly well financed Historical Commission, with a permanent secretary. There is a library or stack room for the storage of books, newspapers, historical manuscripts and documents, and maps which contain much of the history of Polk County. The commission contemplates photostating U. S. Census records of Hillsborough County, from which Polk was formed in 1834, and the census records of Polk from that date, to and including 1890. Mr. M. D. Wilson, secretary of the Polk County Historical Commission, is making an effort to obtain early letters and historical manuscripts.

The Historical Records Survey, of which Mrs. Sue A. Mahorner is state director, has by means of an inventory located many records of which county officials were unaware, and has been responsible for improvements in the methods of keeping and caring for records. The Survey contemplates publishing the inventory of county and state records which is now being compiled.

The Florida Historical Society has accumulated an archival collection which includes approximately 250 documents, 150 manuscripts, from 100 to 200 old newspapers, approximately 100 maps and 800 books.

The Florida State Library is continuing the accumulation of letters, maps, and old newspapers. It is securing many typed articles, chiefly Civil War diaries, through the courtesy of the Historical Records Survey.

The historical societies of Jacksonville, Madison, Tallahassee, Pensacola, and St. Augustine are doing good work in the preservation of archives. The St. Augustine Historical Society has the largest archival collection. Organized about a year ago, the Madison Historical Society has not made more than a beginning on its archival collection. The Tallahassee Historical Society has been organized for five years but has collected very little. This society, however, publishes an *Annual* which gives much information on archives and archival activity. The Pensacola Historical Society is at the present time engaged in the collection of maps and manuscripts.

ABSTRACTS OF ARCHIVE PUBLICATIONS

WESTERN EUROPE

BESCHORNER, HANS, ed., *Archivstudien zum siebzigsten Geburtstage von Woldemar Lippert mit Unterstützung der Wilhelm und Bertha v. Baensch Stiftung*. Dresden, Verlag der Buchdruckerei der Wilhelm und Bertha v. Baensch Stiftung, 1931. 265 pp.

This *Festschrift*, which honors one of the foremost German archivists, contains twenty-nine articles, many of which contain information of value to American archivists. Lippert's contributions to the literature of practical archival economy, as well as history, are described by Rolf Nauman "Woldemar Lipperts Schriftum" (Lippert's writings), pp. 166-173.

The remainder of the studies fall into three groups:

I ARCHIVE PROBLEMS IN SAXONY

BRABANT, ARTHUR (Dresden), *Das sächsische Kriegsarchiv und seine Neuordnung* (The reorganization of the Saxon military archives). Pp. 50-55.

This is a discussion of the reclassification required by the incorporation of the Saxon military archives into the central archives.

KRETZSCHMAR, HELLMUT (Dresden), *Zentralismus oder Regionalismus in sächsischen Archivwesen* (Centralization or regionalism in the archives in Saxony). Pp. 131-140.

The author favors permitting important regions with a distinct history to retain control of their archives. However, he draws a distinction between such regions and modern administrative districts.

FRIEDENSBURG, WALTER (Wernigerode a. H.), *Die Entstehung des Staatsarchiv für die Provinz Sachsen in Magdeburg* (The founding of the state archives of the Province of Saxony at Magdeburg). Pp. 92-102.

ARRAS, PAUL (Bautzen), *Das Stadtarchiv zu Bautzen* (The Bautzen municipal archives). Pp. 1-6.

PIETSCH, ERNST (Plauen), *Aus der Praxis eines sächsischen Stadtarchivars* (Some experiences of a Saxon municipal archivist). Pp. 179-191.

Contains an interesting discussion of the means of making a municipal archives popular with taxpayers.

MÖLLENBERG, WALTER (Magdeburg), *Die kursächsischen Archivalien der preussischen Staatsarchive* (The archives of the Electorate of Saxony in the Prussian Staatsarchive). Pp. 141-146.

BRETHOLZ, BERTOLD (Brünn), *Fremde Archivalien in Archiven* (Extraneous material in archival establishments). Pp. 56-60.

A discussion of the difficulties arising from the incorporation of extraneous records in an archival group by mistake. The mixing of Saxon records with the Moravian archives at Brünn, Czechoslovakia, is cited as an example.

BOER, ELIZABETH (Dresden), *Der Stadtschreiber Michael Weisse (1549-1566), und seine Bedeutung für das Dresdner Ratsarchiv* (Municipal recorder, Michael Weisse, 1549-1566, and his influence upon the archives of the Dresden council). Pp. 42-59.

II EARLY GERMAN ARCHIVES

RUPPERSBERG, OTTO (Frankfurt a. M.), Frankfurt und das Archiv des Reichskammergerichts (Frankfurt and the archives of the Imperial Chamber). Pp. 200-209.

SCHMIDT-EWALD, WALTER (Gotha), Die drei kursächsischen Archive zu Wittenberg (The three archival groups of the Electorate of Saxony at Wittenberg). Pp. 210-224.

ENGEL, WILHELM (Weimar), Territorialänderung und Archivalienfolge (Territorial changes and the redistribution of archives). Pp. 78-91.

DERSCH, WILHELM (Breslau), Die Meininger Wachstafeln (The Meininger wax tablets). Pp. 72-77.

JECHT, RICHARD (Görlitz), Der Jahresanfang in der Görlitzer Kanzlei bis 1550 (The new year in the record office at Görlitz prior to 1550). Pp. 117-124.

TSCHIRCH, OTTO (Brandenburg a. d. Havel), Das Fragment aus dem XII. Buche des Polybius, eine Dresdener Flugschrift aus der grossen Krisis des Jahres 1805 (The fragment of the XII. book of Polybius, a Dresden political pamphlet of the critical year, 1805). Pp. 245-253.

III ARCHIVE PROBLEMS AND TECHNIQUES

BITTNER, LUDWIG (Vienna), Zur Neuorganization des österreichischen Archivwesens (On the reorganization of Austrian archival system). Pp. 36-41.

REDLICH, OTTO R. (Düsseldorf), Die Fürsorge für nichtstaatliche Archive und die Archivberatungsstelle der Rheinprovinz (The care of unofficial archives and the advisory board on archival affairs in the Rhine province). Pp. 192-199.

OBERDORFFER, KURT (Brüx [Most]), Aus dem Archivwesen der sudetendeutschen Städte: Die Archivlehrgänge (Concerning the archive economy of the Sudetic German cities: Archival training courses). Pp. 174-178.

A discussion of the interest of the Sudetic Germans of Czechoslovakia in their archives.

BESCHORNER, HANS (Dresden), Risse und Karten in den Archiven (Sketches and maps in archival depositories). Pp. 20-35.

A discussion of the special problems involved in the care of this type of material.

GLASMEIER, HEINRICH (Velen i. W.), Die in den deutschen Archiven verwendeten Methoden zur Aufbewahrung von Urkunden (Methods used in German archival establishments for storing documents). Pp. 103-107.

A discussion of the various methods with emphasis on a folder invented by the author called the "Urkundenmappe System Landsberg."

KAISER, HANS (Potsdam), Das Provenienzprinzip im französischen Archivwesen (The principle of provenance in French archival economy). Pp. 125-130.

A severe criticism of the departures in France from this principle in classifying archives. In substantiating his criticisms the author gives a good outline of the evolution of archival economy in France.

SCHULTZE, JOHANNES (Berlin-Dahlem), Gedanken zum Provenienzgrundsatz (Thoughts on the principle of provenance). Pp. 225-236.

The author warns against applying the principle of provenance too rigidly. He points

out that a strict application of the rule is, in some cases, impossible, and in others, undesirable. When departments have been abolished and their functions transferred, he thinks provenance should be attributed to that administrative unit from which the records were finally received.

MÜSEBECK, ERNST (Potsdam), Grundsätzliches zur Kassation moderner Aktenbestände (Basic principles in the sifting of modern records). Pp. 160-165.

Contents that experienced archivists who have had thorough training in history should determine which records should be destroyed.

MÜLLER, GEORG HERMANN (Dresden), Das Massenproblem in den Stadtarchiven (The problem of bulk in municipal archives). Pp. 147-159.

To cope efficiently with the unwieldiness of the increasing bulk of modern records, the author suggests that a common procedure be worked out by the state and local authorities. He deplores the tendency to handle the problem by resorting to methodizing schemes such as the decimal system of classification.

GRÖGER, HELLMUTH (Meissen), Neuzeitliche Aufgaben grösserer Stadtarchive (Modern tasks of the larger municipal archives). Pp. 108-116.

The author believes that modern municipal archival establishments should serve other than purely administrative ends; he contends that they should become as well local historical bureaus.

TILLE, ARMIN (Weimar), Soll das Archiv Gegenwartsstoff sammeln? (Should archives collect contemporary material?) Pp. 237-244.

The author's answer is affirmative. He states that the papers of semi-public and private organizations will be needed in future historical inquiries because official decisions in the modern state are frequently based on the activities of such organizations.

VOGES, HERMANN (Wolfenbüttel), Sollen die Kirchenbücher in den Archiven aufbewahrt werden? (Should church records be preserved in archival establishments?) Pp. 254-265.

The author is anxious to have all church records deposited in the official archives, or, at least, concentrated at a central point. He admits that such concentration is faced with many difficulties.

BÄSSLER, GOTTHOLD (Dresden), Die Kriegstagebücher als geschichtlicher Quellenstoff (War diaries as historical sources). Pp. 7-19.

BUTTE, HEINRICH (Dresden), Archive und Familienforschung (Archives and genealogical studies). Pp. 61-71.

Upon the basis of a detailed survey of archival establishments in the German-speaking countries, the author finds that genealogical studies are discouraged by high fees in some centers. He contends that it is in the interest of archival administrations to encourage rather than discourage this work.

ANDREW C. ALBRECHT

ABSTRACTS OF ARCHIVE PUBLICATIONS

EASTERN EUROPE

Russia

The *Tsentral'noe Arkhivnoe Upravlenie* (Central Archival Administration) of the Russian Socialist Federal Soviet Republic (R. S. F. S. R.) and the Union of Soviet Socialist Republics (U. S. S. R.) publishes two official journals. The first of these, *Arkhivnoe Delo* (Archival Science), is devoted mainly to archival activities and developments in Soviet Russia, to reports of work progress in Soviet archival establishments, to Russian techniques and practices, as well as to general discussions on theoretical archival science. Its tone is vividly colored with proletarian propaganda and interest in production efficiency as sponsored by the industrialization program of that country. However, the tinturing of even Soviet archival literature with the faddisms of the moment is not any greater than the doctrinal tinge of publications of most other nations, in their bid for popular support and consumption of a dominant ideology.

Documents and historical studies based on archival collections are published in the historical journal, *Krasnyi Arkhiv* (Red Archives), the second publication of the Central Archival Administration. This journal is devoted to the "publication of unpublished archival materials for the history of foreign politics, of imperial wars, of the revolutionary movement, of the great proletarian revolution and civil war, the history of industries and trades, the history of literature, of art, of mode of life and of social thought" to quote its purposes as set forth in its announcement.

Arkhivnoe Delo, 3/42 (1937)

The first number of this journal appeared in 1923 and was subsequently issued at irregular intervals. Beginning with 1927, however, it has been published quarterly under the supervision of a board of editors, who retain their anonymity inasmuch as the names of the members do not appear anywhere in the journal. The current number is issued in three thousand copies.

An examination of the table of contents of this, as well as of other issues, reveals that *Arkhivnoe Delo* is organized as follows, with slight variations from issue to issue: (I) articles on archival techniques and practices and reports of activities in various archival establishments (a) in R. S. F. S. R. (articles of general interest also appear here), (b) in U. S. S. R., and (c) elsewhere; (II) comments on suggestions; and (III) reviews (mainly of foreign publications) and bibliography.

I ARTICLES AND REPORTS

In R. S. F. S. R.

BAL'DMAN, L., *Itogi raboty tsentral'nykh arkhivov za 1936 god* (Results of activities of central archives in the year 1936). Pp. 1-12.

A report of various phases of archival work such as arrangement, description, and weeding of records, inventorying, reorganization, research, and publishing activities of eleven central archives. Comparative tabulations are shown giving number of items and percentages of each phase of work completed during the years 1932-1936 inclusive. A table giving the breakdown of personnel in each central archives according to party affiliation, training, and experience is shown also. The author mentions the lack of

sufficient indexes, catalogues and guides as the next great archival deficiency scheduled for remedial consideration and planning.

SOFINOV, P., Gosudarstvennyi arkhiv byvsheĭ Rossiĭskoĭ imperii (State archives of the former Russian Empire). Pp. 12-25.

This article gives the titles, a short description of the contents, and historical data relating to the thirty-one fonds comprising this particular archival collection.

ERMOIAEV, P., Arkhivnoe stroitel'stvo v Chuvashii (Archival organization in the Chuvash Autonomous Soviet Socialist Republic). Pp. 26-41.

This report is similar in character to that in the first article but relates to activities in the Chuvash Republic. Tabulations showing budgets for the years 1925-1930 inclusive, the growth of personnel from 1923-1937 inclusive, research and reference service performed and plans for future archival work are given.

BABURIN, D., Materialy k obzoru fondov Manufaktur-Kollegii i Manufaktur-Kontory (Materials for a review of the fonds of the Industrial Board and Industrial Bureaus). Pp. 42-74.

This article gives description and chronological limits of archival materials for research in history of various Russian industries.

FOMIN, N., Sistematizatsiia arkhivnykh materialov (Systematization of archival materials). Pp. 75-101.

This article is the first installment of a series on the study of various archival systems. In a footnote on page 75, the editorial board invites scientific archival workers to a general discussion and critical evaluation of the problems of archival methodology and techniques as set forth in this article. The author bases his study on archival organization systems of western Europe, of imperial Russia, and of Soviet Russia. He has used the following references: G. A. KNIAZEV, *Teoriia i tekhnika arkhivnogo dela* (The theory and technique of archival science). Leningrad, 1935. Arkhivovedenie (Archival Administration), Part 1, *Radians'ka shkola, Kharkov*, 1932. S. MULLER, J. A. FEITH and R. FRUIN, *Manuel pour le classement et la description des archives*. The Hague, 1910. P. F. FOURNIER, *Conseils pratiques pour le classement et l'inventaire des archives et l'edition des documents historiques écrits*. Paris, 1924. CHARLES JOHNSON, *The Care of Documents*. London, 1919. *Archivstudien*. Dresden, 1931. Articles in *Leningradskii arkhivist* (The Leningrad Archivist), and other Russian publications.

GORDON, M., Arkhivnyi material kak orudie agitatsii i propagandy (Archival materials as a means of agitation and propaganda). Pp. 102-108.

PODKUVKA, I., Deloproizvodstvo (Administrative procedure). Pp. 109-119.

This article is the first installment of a series of instructions on the mechanics of administrative procedure applicable to archival establishments.

KUTSENOS, I., Vliianie khloropikrina na bumagu i tekst (The effect of chloropicrin on paper and print). Pp. 120-126.

A technical paper with laboratory results in tabular form of the effect of chloropicrin, as a disinfecting agent, on papers and inks of varying compositions used in Russian documents from 1743 to 1933.

In U. S. S. R.

TIKHONOV, N., Pervye kursy tekhnimuma po restoratsii i konservatsii arkhivnykh

dokumentov (First technical courses in restoring and preserving archival documents). Pp. 127-131.

This article gives the history and reasons for the organization of technical courses in restoring and preserving archival documents. This course is under the directorship of the Technical Laboratory for the Restoration and Preservation of Documents, Academy of Sciences in Leningrad. The subjects included in the course are briefly described.

BYCHKOV, P., O rabote kino-otdela Tsentral'nogo Kino-Foto-Fono-Arkhiva (About the activities of the cinema division of the Central Cinema-Photo-Phono Archives). Pp. 132-141.

This article gives the history of the organization of the cinema division in 1926. Examples of registration, inventory and catalogue forms for films are shown.

ZHURAVLEV, N. and BOBIN, C., O rabote arkhivov deistvuiushchikh uchrezhdenii g. Kalinina (About the work in the archives of the active institutions of the town of Kalinin). Pp. 142-144.

ERMOLAEV, P., Sostanienie arkhivov deistvuiushchikh uchrezhdenii Chuvashii (The condition of archives of active Chuvash institutions). Pp. 144-145.

G. N., Publikatorskaia rabota Tobol'skogo arkhiva (Publishing activities of the Tobolsk Archives). Pp. 146-150.

The publishing activities of this Soviet archival establishment began in 1934. It is interesting to note that archival materials are being published in the local newspapers. This article gives the list of newspapers, information regarding the authors and subject matter of articles, and local documents published.

KETO KADZHAIA, O rabote zala zaniatii pri Tsentral'nom Arkhivnom Upravlenii Gruzinskoi SSR (About the work of the search room of the Central Archival Administration of the Georgian Soviet Socialist Republic). Pp. 151-152.

Elsewhere

Novoe polozhenie ob arkhivnom upravlenii Uzbekskoi SSR (New regulations for the archival administration of the Uzbek Soviet Socialist Republic). P. 153.

This is an excerpt from journal No. 6/60 of the meeting of the Presiding Council of the Central Executive Committee of the Soviets of the Uzbek Soviet Socialist Republic.

II COMMENTS ON SUGGESTIONS

This section is an open forum for suggestions and discussions of various phases of archival techniques, practices and problems.

CHALYI, I., Otvet na predlozhenie tov. Kamenovoï (Reply to the suggestion of Comrade Kamenova). P. 154.

This article relates to a suggested method of binding records in central archives which appeared in *Arkhivnoe Delo*, 4/41 (1936).

III REVIEWS AND BIBLIOGRAPHY

Internationaler Archivführer (International Archives Directory). Zürich and Leipzig, 1936. Reviewed by C. Gordon. Pp. 155-157.

Novye postupleniia inostrannoï literatury po arkhivovedeniiu v biblioteku Istoriko-

Arkhivnogo Instituta (New acquisitions of foreign literature on archival administration by the library of the Historico-Archival Institute). P. 158.

The bibliographical list which follows is divided under two headings "Books" and "Periodicals." In the list are the following American publications:

Second Annual Report of the Archivist of the United States, 1935-1936. Washington, Government Printing Office, 1936. 109 pp.

The National Archives of the United States. *Bulletins of the National Archives*, No. 1, November, 1936. 13 pp.

NEWSOME, A., Unprinted Public Archives of the Post-Colonial Period. Their availability. *The American Historical Review*, Vol. xxxiv. New York, 1934.

OLGA P. PALMER

